

3d. ~~Library~~

Antiquity

A QUARTERLY REVIEW OF ARCHAEOLOGY



Edited by Glyn Daniel

Vol. XXXIII No. 129 MARCH 1959

<i>Editorial</i> — — — — —	I
KATHLEEN KENYON: <i>Earliest Jericho</i> — — — —	5
GRAHAM WEBSTER: <i>Roman Windows and Grilles</i> — — — —	10
BEATRICE DE CARDI: <i>Fresh Problems from Baluchistan</i> — — — —	15
DENYS PAGE: <i>The Historical Sack of Troy</i> — — — —	25
GIOVANNI LILLIU: <i>The Nuraghi of Sardinia</i> — — — —	32
A. H. M. JONES: <i>Over-taxation and the Roman Empire</i> — — — —	39
CHESTER CHARD: <i>New World Origins: a Reappraisal</i> — — — —	44
<i>Notes and News</i> — — — — —	50
<i>Reviews (see overleaf)</i> — — — — —	66
<i>Book Chronicle</i> — — — — —	9, 43, 49

Published at Ashmore Green, Newbury, Berks., England

Price: Single Copies 7s 6d—Annual Subscription 30s (or 5 dollars)

ANTIQUITY was founded in 1927 by DR O. G. S. CRAWFORD

ADVISORY EDITORS

*Professor Dr Gerhard Bersu, Dr G. H. S. Bushnell, Professor M. E. L. Mallowan,
Professor Stuart Piggott, and Sir Mortimer Wheeler.*

REVIEWS

<i>The Natufian Culture.</i> By Dorothy A. E. Garrod (<i>C. B. M. McBurney</i>)	- - - -	66
<i>Town and Country in Roman Britain.</i> By A. L. F. Rivet (<i>Sheppard Frere</i>)	- - - -	67
<i>Le Palais Royal d'Ugarit.</i> Edited by Cl. F.-A. Schaeffer (<i>O. R. Gurney</i>)	- - - -	69
<i>Prehistory and Religion in South-East Asia.</i> By H. G. Quaritch Wales (<i>Tom Harrisson</i>)	-	70
<i>Roman History from Coins: Some Uses of the Imperial Coinage to the Historian.</i> By Michael Grant (<i>C. H. V. Sutherland</i>)	- - - - - - - - - -	72
<i>Scotland before History.</i> By Stuart Piggott (<i>R. B. K. Stevenson</i>)	- - - - -	73
<i>The Concise Encyclopaedia of World History.</i> Edited by John Bowle (<i>Glyn Daniel</i>)	- -	75

EDITORIAL NOTICES

ANTIQUITY is published quarterly on the 1st of March, June, September and December. The ANNUAL SUBSCRIPTION (including postage) is ONE POUND TEN SHILLINGS Sterling, or FIVE DOLLARS, *payable in advance to ANTIQUITY*, Ashmore Green, Newbury, Berks., England. SINGLE COPIES may be obtained for 8s (post paid).

Everyone wishing to subscribe, or to obtain single copies, is asked to *write direct* to the Publisher, H. W. EDWARDS, Ashmore Green, Newbury, Berks., England. Tel. Thatcham 2105.

MSS (whether in the form of Articles or Notes) offered for publication should be sent to DR GLYN DANIEL, St. John's College, Cambridge, England. All MSS should be type-written. The Editor is not responsible for the opinions expressed by contributors.

Contributors can help the Editor:

1. By sending a neat and legible typescript.
2. By confining proof-corrections to mistakes. Alterations of the text can only be accepted in the most exceptional cases, e.g., the discovery or publication of new matter.
3. By returning the corrected proof at once to the Editor, by air-mail from overseas.

BOOKS for REVIEW should be addressed to the EDITOR OF ANTIQUITY, St John's College, Cambridge, England.

Offprints can be purchased from The Whitefriars Press Ltd., 26 Bloomsbury Way, London, W.C.1. They should be ordered *at least three weeks before* the date of publication; in confirming offprint orders the Press will supply details of approximate costs.

BINDING: John Bellows Ltd, Printers and Publishers of Eastgate, Gloucester, will continue to assist those wishing to bind their copies of ANTIQUITY. Binding cases only are 8s 6d; the cost of binding each volume is 15s (including case and return postage). Please write direct to John Bellows Ltd.



See p. 50]

STONEHENGE: work in progress 1958.

Antiquity

VOL. XXXIII No. 129

MARCH 1959

Editorial

IT is a year since we mourned the death of O. G. S. Crawford in the pages of ANTIQUITY for March, 1958, and announced a new Editor and Board of Advisory Editors. It has been an anxious, exacting, and exciting year, and we are grateful to contributors and subscribers who have borne patiently with the problems of editorial change, and to the Advisory Editors, Publishers and Printers for their constant advice and help. Throughout 1958 there has been the nagging doubt as to whether ANTIQUITY, a brilliant and essentially personal conception in the twenties, and a wonderful vehicle for the popularization of archaeology in the years before the 1939-45 war, still had a place in these days of glossy magazines, easy archaeological listening and viewing programmes, and of new specialist journals like, for example, *Medieval Archaeology*, the first number of which we comment on below. Would the man who said when he heard of Crawford's death, 'That is also the death of ANTIQUITY', be proved right?

Fortunately, he was wrong, and the year 1958 has ended with over a hundred more subscribers than it began. We have printed a volume of 296 pages, longer by 40 pages than any volume since the dark days of 1943 when ANTIQUITY was down to 224 pages. But we can only continue in this way if we are assured of continued new support. If every subscriber would, over the next two years, produce one other, then we could give an immeasurably increased service in the publication of original articles, notes, news and reviews. It should not be forgotten that ANTIQUITY is the only journal in the world devoted to the past of man which is independent and all-embracing. It is the organ of no State Institute or archaeological society; it is self-supporting and succeeds by the interest and inspiration of its readers. We hope that this first number of Volume XXXIII with articles ranging from Baluchistan, through Jericho and Troy to Sardinia, the British Isles and the New World will satisfy that interest.

Of the growing and wide interest in man and his remote past there can be today no doubt. Nowhere is this so easily measured as in the growth of archaeological interest in the British universities and university colleges. Recently, in Leicester and Sheffield, meetings of archaeological societies were so well attended that there was only standing room. The Oxford University Archaeological Society has just organized an exhibition of the work of its members, and the items listed in the catalogue show the energy and wide range of interests of the members of that active Society—excavations at Madmarston Early Iron Age camp near Banbury, the discovery of a new Roman marching camp in Brecknockshire, the digging of a Gallery Grave at Cognac, participation in excavations on Iona and at Kaupang in Norway, the study of Roman coins and Mesolithic flint implements. At Cambridge, for the first time since the Anthropology Tripos was founded in 1915, the number of students reading archaeology and anthropology is over 100, with 20 research students.

ANTIQUITY

The year 1927, when ANTIQUITY was founded, saw the establishment of the first two chairs in British universities of what might be called non-classical archaeology. Twenty years before, in the first of his Ford lectures at Oxford, Haverfield stressed the gulf that separated archaeology from the academic world and declared that the greatest of our archaeologists had had nothing to do with universities. Oxford had discussed the establishment of a Chair of Archaeology in the eighties and Arthur Evans was strongly advised to stand. He refused to do so, writing to Freeman 'the Electors, including Jowett and Newton, . . . regard "archaeology" as ending with the Christian Era. . . to confine a Professorship of Archaeology to classical times seems to me as reasonable as to create a Chair of "Insular Geography" or "Mesozoic Geology"'. The Disney Chair of Archaeology in Cambridge had been founded in 1851—the very year in which the word prehistory was first used in Daniel Wilson's *The Archaeology and Prehistoric Annals of Scotland*: the Disney Professor was required to deliver at least six lectures 'on the subject of Classical Mediaeval and other Antiquities, the Fine Arts and all matters and things connected therewith'. In 1927 the function of the Disney Professor changed; he was assigned to the Faculty of Archaeology and Anthropology and was told it was his duty 'to give instruction and to promote the progress of archaeological studies within that Faculty'. In the same year Gordon Childe was elected the first holder of the Abercromby Chair of Prehistoric Archaeology in Edinburgh. The year 1927 may therefore fittingly be remembered as a landmark in the history of the study of non-classical antiquity in our universities.

In the three decades since then many new professorships, readerships and lectureships have been created. This academic year has seen R. J. C. Atkinson become the first Professor of Archaeology at University College, Cardiff, and J. M. Cook (formerly Reader) become the first Professor of Classical Archaeology at Bristol. As far as one can make out from the indexes of Calendars and Handbooks—and we welcome corrections in this matter—of all our universities there now seem to be no posts in archaeology only at Hull, Sheffield, Southampton, Reading, Aberdeen, Glasgow and St Andrews. To these should be added the university colleges at Aberystwyth, Bangor and Swansea, and the University College of N. Staffordshire, where, even in the first year Foundation Course, human history begins in the 6th century B.C.

Yet, if there is growing agreement on the need for the teaching of archaeology in our universities, either independently, or in close association with Ancient History, the Classics, Fine Arts or Anthropology—there seems to be no general agreement how it should be taught. In some universities (as for example Cambridge, Edinburgh, Birmingham, and Wales) archaeology can lead to an Honours degree (of course in association with other subjects); elsewhere it is part of a General degree or leads to a Diploma. In his inaugural lecture as Professor of Roman-British History and Archaeology in the Durham Colleges, Eric Birley said: 'Archaeology, by its very nature, cannot well be treated as a full and free-standing academic subject in its own right'; and W. F. Grimes, who chose as the subject of his inaugural lecture as Professor of Archaeology and Director of the Institute of Archaeology in the University of London, 'Archaeology and the University', said: 'I am by no means the first archaeologist to make the point that archaeology is not so much a "subject" in itself as a method: or an aggregation of methods. It is a method of augmenting history; and its purpose is history.' (*Annual Report of the Institute of Archaeology, London, 1955-6, 40*).

Here is the crux of the matter. The very nature of archaeology is that we sometimes mean by it method and technique, sometimes history. There is the study of the aggregation of methods whereby history is wrested from the material, mute remains of the

EDITORIAL

past; and there is the study of the history which has been achieved from the material. The achievement is, from the point of view of historiography, on two levels: before 5,000 B.C. all our sources are archaeological—we are in what Herzfeld called *absolute prehistory* and Hawkes in his Cognitional System of Nomenclature, *antehistory*; after that moment, in varying degrees we are in a state where the past is illuminated by material and written remains, in a time which by modern English usage would be called protohistory and which merges into the ancient history of the founders of civilization. There is then to be considered, ideally and notionally, the *student of archaeology*, and the *student of antiquity* whether he be an absolute prehistorian, or a protohistorian (or ancient historian). In practice these two students cannot, of course, be divorced, but unless we realize that this difference exists we are not in a position to think clearly about how the study of man's early past should fit into our university education.

It seems to us that British Universities should provide teaching both in the methods of archaeology, and in the study of antiquity. It may be that the first can best be done by Diplomas, and the Institute of Archaeology in London, with its magnificent new home in Gordon Square, is admirably equipped to provide instruction in a one-year Diploma of Technical Archaeology. Such instruction can also be combined with the study of antiquity as part of a university course, and it would be as unthinkable to train graduates in the study of antiquity without training in the methods of archaeology as to train mediaeval historians who did not understand palaeography and diplomatic. By now the study of antiquity is something which, in our view, has as much right to a place in university General and Honours degrees as those other branches of human history which deal with Ancient History, Medieval History and Modern History. And, like them, it has no right to constitute a degree alone, but as part of one in collaboration with other disciplines such as, for example, Anthropology, Ancient History, Human Geography.

Archaeology has by many been claimed to be a science, while the study of antiquity is declared by most to be a part of History. Professor Grimes, in the inaugural lecture from which we have already quoted, says 'archaeology occupies . . . a sort of no-man's land between the sciences and the arts', and thinks that this is 'somewhat uncomfortable'. But it is not uncomfortable; this is the no-man's land which the human sciences must conquer. This is their field, gradually being explored by anthropologists, human geographers, archaeologists, and, when British universities will recognize them, sociologists. For too long, in schools, at universities, at educational conferences, at political meetings and in the press, there has been talk of the divide—the Great Divide between the sciences and the humanities. On analysis this divide is between specialization in the natural sciences on the one hand, and the study of Plato and English constitutional history on the other. It is a function of established British 19th-century education, and its perpetuation is naturally encouraged by that establishment. Of course, chromosomes and Cicero appear at VIth form and university scholarship level to be mutually unintelligible, and separated by an unbridgeable divide. But the divide is something we are taught to recognize, and the no-man's land is a country of imagination we then assume to exist.

We, in the middle of the 20th century, can break down this divide, can reconquer this artificial no-man's land by making science historical and history scientific. The human sciences are here to bridge that gap; the true student of antiquity will range from Carbon 14 dating, clay varves and archaeomagnetism to the analysis of culture change, the description of the development of ancient civilizations, and the study of early art and architecture. The man who is brought up in the university to read and understand this and the last two numbers of *ANTIQUITY*, for example, has bridged the divide, and is conquering the no-man's land.

ANTIQUITY

Let us be bold enough here to make a prophecy (with which we know only too well some of our Advisory Editors will disagree). It is fifty years since Haverfield recorded the lack of interest in archaeology in our universities, and thirty since the Abercromby Chair was founded and the Disney Chair redefined. We think that in between thirty and fifty years from now, most British universities will have Honours schools of antiquity in which students may devote themselves to the early past of man in association with a study of ancient history, anthropology, geography, the techniques of archaeology or other subjects.

Professor H. M. Chadwick once called what is now the Anglo-Saxon Tripas in Cambridge (but is still enshrined in the hearts of most students of antiquity as 'Section B'), 'the Classics of the North'. He realized that the study of what Freeman called, in criticizing the *Greats* tradition, the study of 'the Europe of a favoured period and a very limited area', was not the total study of antiquity. Sir Edward Burnett Tylor in 1871 in his *Primitive Culture* wrote happily 'the history and prehistory of man take their proper place in the general scheme of knowledge'. Tylor and Chadwick were far-sighted visionaries and scholars of unusual breadth and tolerance; so were the other founders of anthropology and antiquity as university disciplines—Haddon, Ridgeway, Frazer, Myres, Balfour, Marett. By 1971 we may well find that the history and prehistory of man have taken their proper places in the general schemes of university knowledge—even in the Foundation Course at Stoke.

* * *

MEDIEVAL ARCHAEOLOGY

Welcome to the first issue (Vol. I, 1957) of *Medieval Archaeology; the Journal of the Society for Medieval Archaeology*. We have already (ANTIQUITY, 1958, 126) referred to the foundation of this Society. The first issue of the journal (Vol. II is already in the press), lives up to the hopes engendered by the Society. It is well produced and, in addition to reviews and a survey of medieval Britain in 1956 by David Wilson and John Hurst, has eight articles, including C. A. Raleigh Radford on 'The Saxon House', Rosemary Cramp on 'Beowulf and Archaeology', and Juston Schove and A. W. G. Lowther on 'Tree-rings and Medieval Archaeology'. The subscription to the Society and the journal is £2 2s. a year (*bona fide* students under twenty-five £1 1s.). Addresses: *Secretary, c/o Society for Medieval Archaeology, The British Museum, London, W.C.1*; and the *Editor: Dr D. B. Harden, The London Museum, London, W.8*.

* * *

EXPEDITION

The first number of *Expedition* was published in the autumn of 1958. It is a revised form of the *Bulletin of the University Museum of the University of Pennsylvania*, whose Director, Dr Froelich Rainey, is well known to readers of ANTIQUITY. The Editor of *Expedition* is Geraldine Bruckner, and the Editorial Board consists of Alfred Kidder II (Chairman), Carleton S. Coon, Loren C. Eiseley, Samuel N. Kramer, and George F. Tyler, Jr. The first issue contains articles by Rodney Young on 'The Gordion Tomb', Marianne Stoller on 'Te-Moana-Nui-O-Kiwa', and Edwin Shook on 'The Temple of the Red Stela'. Not surprising in a journal published by the Museum which invented the American prototype of *Animal, Vegetable, Mineral?* there is a picture quiz called 'How is your Museum I.Q.'. *Expedition* will be issued quarterly; annual subscription \$2 a year. Address: *The University Museum of the University of Pennsylvania, 33rd and Spruce Streets, Philadelphia 4*.

Earliest Jericho

by KATHLEEN M. KENYON

In 1956 ANTIQUITY published the text of the Marett Memorial Lecture by Dr Kathleen Kenyon, Director of the British School of Archaeology in Jerusalem, in which she summarized the main results from her excavations at Jericho up to that year. Since then she has directed two further seasons' work at Jericho (PLATE I b), and the results are summarized in the present article. In her earlier article (ANTIQUITY, 1956, 120) Dr Kenyon showed that there still remained a gap in the framework of results for the beginning of the Neolithic. The last two seasons of excavations have filled this gap, and here Dr Kenyon concentrates on this aspect of her work in Jericho, omitting the supplementary evidence obtained during the 1956-7 and 1957-8 seasons about the later periods.

THE five seasons of excavations which had taken place up to 1956 had very greatly extended the knowledge of the Neolithic of Jericho which had been obtained by Professor Garstang's excavations of 1935-6. The type of well-built houses with rectangular rooms and burnished plaster floors had been found to extend all over the mound in a settlement at least the equal in size of the successive Bronze Age towns, and to have been defended, at a stage midway through its existence, by a massive stone wall. A Carbon-14 dating of c. 5850 B.C. $\pm^1$ was suggested by material from the immediately preceding fill. Earlier than this settlement, which it is claimed is worthy of the title of a town, was another, also of urban character, separated from the later by a complete stratigraphical break, with houses of a curvilinear plan, and with associated flint and bone industries of an entirely different type.

The subsequent excavations have extended our knowledge of the later town and the associated culture, to which it is now proposed to give the designation Pre-Pottery Neolithic B, but have not introduced any new factors. The extended clearance has, however, emphasized the stereotyped plan of the houses. An excellent new example has been cleared in the trench at the south end of the tell, which is identical in the main features of its plan and structure with those excavated on the west side and at the north end. Another interesting find is a further example of the plastered skulls, the tenth to be found. The other nine all came from the same building in Square DI on the west side of the Tell. The new one was found in Square EIII towards the north end. It would thus appear that this treatment of skulls, presumed to be those of venerated ancestors, was a widespread practice. Light was also thrown on the development of the art of portraying the human form. In 1935 Professor Garstang had found a group of three plaster figures, approximately life-size, of which only the head of one could be recovered. This had a resemblance to the plastered skulls, in that shells were used to indicate the eyes, but no skull was used as a basis and the head was flat and disk-like. The new finds suggest a still further development of stylization. Large numbers of fragments of painted plaster had been found previously, but in 1958 a complete head and bust was found. The head is flat and spade-shaped, with no indication of features, but the shoulders and bust are rendered with a

¹ F.38: 7800 B.P. $\pm$ 160

considerable degree of realism. This figure, and a large number of fragments of similar figures, came from the highest surviving level of the Pre-Pottery Neolithic B phase.

In 1956, our information concerning the preceding Pre-Pottery Neolithic A phase was limited to the north-central part of the tell. In 1958 it was traced to the extreme north and south ends. The settlement therefore covered an appreciably larger area than the Bronze Age town, of which the walls crown the slopes of the north and south ends, whereas the Neolithic houses extend to their foot. Moreover, the continuance of the defensive wall was established in both the north and south trenches; it is therefore a town wall and not a citadel wall. In the south trench it was 1.6 m. wide and survived to a height of 2 m.; in the north trench only a single course survived. In both it resembled in character the earliest of the three walls found on the western side, and it may be that the later stages were still further out, and were destroyed by the Middle Bronze Age revetment which cuts right down to bed-rock.

The curvilinear houses of the Pre-Pottery Neolithic A stage were traced through a large number of successive building phases on all the sites excavated. Some of the earlier ones were well preserved, with walls solidly built of the plano-convex hog-backed bricks (PLATE II (b)). Each has a projecting porch with steps or a slope leading down from a higher external level. The amount of fallen debris in them suggests that the solid walls were carried right up, probably to form a dome-shaped roof.

The major architectural achievement of the period was, however, in connection with the defences. The finely-preserved section of wall on the west side of the tell, backed by the massive stone tower, had already been exposed in 1956 (PL. II (a)).² The tower has now been cleared to bed-rock for almost its whole circuit, and its structural history has been worked out (PLATE III). The original town wall was a free-standing affair 1.75 m. wide. Against its rear, and integral in build with it, was the tower, which in its first stage was circular at the summit, but at the base the curve flattened to its junction with the town wall, making it semi-circular in plan; this would suggest that the summit was not attached to the wall, the tower perhaps being carried up to a greater height than the wall. The present surviving height of the tower is 8.25 m., and that of the early wall 3.6 m. In the centre of the tower is a staircase of twenty-two well-dressed stone steps, leading down to a passage at the base of the tower (PLATE III). In the 1958 excavations, the entrance to this passage from the east was uncovered. It seems probable that the passage and staircase are simply an excellently planned and executed means of providing for the manning of the tower.

The first stage of this complex seems to be purely military in planning, if it is not an anachronism to use this adjective in connection with such a very early period. The second stage is more complicated. Against the town wall and the tower were built a number of curious enclosures, in plan quite unlike the stereotyped house plans of the period (PLATE II (c)). The walls are not very thick, but are heavily plastered. Though considerable lengths of them, surviving to a height of 3 m., have been exposed, no doorways have been found. In one wall, however, is a small opening connecting two adjoining areas, through which runs a series of layers of water-laid silt. It therefore seems very probable that the enclosures are water-tanks. At Jericho this seems rather curious, for with the abundant water-supply from the stream, there was never the necessity of conserving rain-water which existed on other Palestinian sites. The only possible explanation seems to be that the purpose was irrigation. In the earlier article it was suggested that the development of irrigation played an important part in the stimulation of a communal organization. Irrigation from the waters of the spring could however only be used in the

² ANTIQUITY, 120, PLATE I.

EARLIEST JERICHO

fields to the east of the tell. It seems possible that these tanks were an attempt to provide water for the area to the south and west. They could not, of course, have been filled directly from the spring, but either by the collection of rainfall or by water-carriers.

The tanks were gradually filled up with layers of silt and with building material washed from the mud-plastered walls. Ultimately they were buried at the time of a rebuild of the defences, which involved rebuilding the town wall 3.5 m. to the west, and adding an additional skin-wall to the tower. Subsequently, however, new tank-like enclosures were built, and these also formed part of the lay-out associated with the third phase of the defences, a phase which included rebuilding the town wall almost from its foundations. The tank-like features, therefore, were an important element in a number of successive phases, and in each phase the raised level would have made possible the provision of water over a large area, if their function has been correctly interpreted.

Ultimately, the tanks were abolished, and a succession of the ordinary round houses of the period were built against the tower and town wall. It was this phase which provided the material which has given the only Carbon-14 dating so far obtained for the Pre-Pottery Neolithic A period. A house in the third building-level was burnt down and its floor was found covered with charred beams. This charcoal gave a date of c. 6840 B.C.³ It comes, of course, from a stage relatively late in the history of the defences, which must go back at least to 7000 B.C.

One of the main objectives of the final season of excavations was to establish how far back the origins of this remarkable urban development could be traced at Jericho itself. In the sequel, three main phases have been found, which do seem to provide a complete and logical sequence.

In the first place, houses have been found which precede the defences. Excavation in the passage of the tower showed that there was one of the characteristic round houses directly beneath the tower. There is a suggestion that the tower was actually cut down into a series of house levels, but the area cleared was not sufficient to confirm this. At the north and south ends of the tell, too, there were house levels earlier than the town wall. Therefore, as is quite reasonable, house-building had expanded to the full ten acres of the settlement before the defences were laid out.

In all areas excavated, there was a long succession of the round houses, built one on top of the other; full details of the sequences have yet to be worked out. In most areas, these houses with their characteristic plans and structure go down nearly to bed-rock. The exception is an area in the north-west quadrant of the tell, about 150 ft. north of the tower. Here there is a deposit of 13 ft. below the lowest round house. This 13 ft. is made up of an innumerable succession of floor levels, associated not with solid buildings but with structures of which the walls survive only as slight humps showing in section. These structures must have been slight affairs of branches and skins, and the only form of bricks in the humps and in the debris in the floors was clay balls about the size of a cricket ball or smaller. The depth of deposit indicates a long-continued period of occupation, but in slight structures more suitable to a nomadic existence. Here, therefore, we have the beginnings of settled occupation, in fact the nucleus of the tell. This nucleus only covered a limited area, for it is not found 150 ft. to the south, nor 220 ft. to the north-east. It is only after the appearance of the solid houses that the settlement spreads to its full size.

It is in the site 220 ft. to the north-east that a still earlier phase has been found. Here, beneath the lowest round house, was an entirely different structure. It consisted of a clay platform bounded by a substantial stone wall, apparently rectangular in plan (PLATE I (a)). The clay is the natural layer overlying bed-rock, and over the rest of the area it had been

³ F.39: 8800 B.P. $\pm$ 160.

ANTIQUITY

cleared away, leaving the rock exposed and the platform in reserve with its bounding wall. Two features suggest that this structure had a ceremonial purpose. In the wall were set two substantial stone sockets, stones bored through to their complete thickness of 2 ft. 6 in.; these might well have held something in the nature of totem poles. Secondly, the platform was kept scrupulously clean throughout its use, in spite of the very sticky nature of its surface, and in contrast to the debris on the adjoining rock surface. It does therefore seem reasonable to suggest that it was a shrine or holy place.

The cultural setting of this structure is certain. In the debris associated with it were undoubted Natufian artifacts, including a bone harpoon-head and many microliths, amongst them a single lunate. The structure is therefore Mesolithic; Mesolithic hunters must have visited the shrine and established a sanctuary there in recognition of its life-giving properties, a custom which exists to this day in the Orient.

From this Mesolithic structure, sanctuary or whatever it may be, the succession to the Pre-Pottery Neolithic A town is unbroken. The analysis of the flint and bone industries is not yet complete, but it is already clear that they are essentially Natufian throughout. Moreover, the Natufian of the Mesolithic stage is Lower Natufian, comparable with the earliest Mesolithic stage on Mount Carmel, and the industry of the 'nucleus tell' stage, which may be called Proto-Neolithic, and of the succeeding fully developed settlement, is derived from this, and not from the Middle and Upper Natufian of Mount Carmel and elsewhere.

The Mesolithic level has also produced material for a Carbon-14 dating. The structure incorporated a considerable amount of timber, and it was ultimately burnt down. A count of a test on the charcoal from these beams gave a date of 7800 B.C., the first dating to be obtained from a Natufian level.⁴

It would therefore seem that in Palestine there were two lines of development from the first Mesolithic stage. One was conventional, through succeeding Mesolithic stages of the Middle and Upper Natufian, with an equipment tending to becoming less rich.⁵ At Jericho it has been shown that there were other groups which settled down and exploited those first experiments in agriculture which it has long been claimed were being made by the Natufians of Mount Carmel.⁶ The favourable environmental conditions there led to a success of which the evidence is first the 'nucleus tell', showing continuous settlement, and secondly the expanded settlement of Pre-Pottery Neolithic A. Presumably the inhabitants of Middle and Upper Natufian sites elsewhere were the cousins and contemporaries of the inhabitants of the Jericho settlement with their Neolithic way of life, but were still technologically and economically in the Mesolithic stage.

In the general field of Palestinian prehistory, a problem remains which will not be answered at Jericho. The accepted scheme hitherto has been a Mesolithic Natufian, succeeded by a Neolithic Tahunian, and it has been claimed that the site of El Khiam, near Bethlehem, shows a transition from the Upper Natufian to the Tahunian. It is possible that this is so, though it is not accepted by all experts. But it is quite clear that at Jericho there was no transition. The Tahunian industry appears at Jericho with the Pre-Pottery Neolithic B people, after an absolute stratigraphical and cultural break. Moreover, it has already been pointed out that the newcomers arrived with a fully developed architecture and all the other appurtenances of settled life. It may be that they are the ultimate descendants of the other branch of Natufians, whose industry is shown developing the characteristic Tahunian features at El Khiam, and who subsequently established

⁴ The two counts were: F.69: 9850 B.P. $\pm$ 240; F.72: 9800 B.P. $\pm$ 240.

⁵ Garrod, *Proceedings of the British Academy*, 1957.

⁶ E.g. Childe, *New Light on the Most Ancient East*, revised edition, 1952, p. 29.

EARLIEST JERICHO

settlements (as yet undiscovered) in which an elaborate architecture was perfected, or it may be that they came from outside Palestine. This problem requires further research.

The final two seasons at Jericho have therefore shown that the first of the large-scale Neolithic settlements at Jericho, that to which the name of Pre-Pottery Neolithic A is now given, is truly indigenous. The development from the Palestinian Mesolithic to a fully Neolithic type settlement took place at Jericho itself, in a period covering approximately the 8th millennium B.C. This development may be paralleled elsewhere. Professor Braidwood has traced a comparable technological development in Iraq, though with gaps, and not on a single site. For the first village settlement at Jarmo, he now claims a date of c. 6500 B.C.,⁷ though there would appear to be a greater weight of evidence in favour of the hitherto accepted date of 4750 B.C. But in any case it seems clear that progress towards a settled way of life, and therefore towards the beginnings of civilization, was taking place in a number of areas in the Near East. The evidence from Jericho provides the most complete picture so far available.

⁷ *Science*, 127, p. 1419 ff.

Book Chronicle

We include here books which have been received for review, or books of importance not received for review, of which we have recently been informed. We welcome information about books, particularly in languages other than English and American, of interest to readers of ANTIQUITY. The listing of a book in this chronicle does not preclude its review in ANTIQUITY.

THE OXFORD HISTORY OF INDIA. Edited by PERCIVAL SPEAR. pp. 898, 40 plates. Oxford, 1958. 42s. The third edition of the late Vincent A. Smith's History, completely revised and reset. Part I (Ancient and Hindu India) consisting of 229 pp. has been revised by Sir Mortimer Wheeler and A. L. Basham.

VALLEY ON THE MARCH. By LORD RENNEL OF RODD. pp. 316, 17 plates. Oxford, 1958. 42s. A local history of a group of pre-Domesday manors on the Herefordshire March of Wales.

HISTORY UNEARTHED. By SIR LEONARD WOOLLEY. pp. 183, including 104 pp. of illustrations. Benn, London, 1958. 30s. An account of eighteen important excavations from Nimrud to Maiden Castle and Pazyryk. The illustrations reproduced by off-set lithography are disappointing, and sometimes impossible.

DOCUMENTS FROM OLD TESTAMENT TIMES. Edited by D. WINTON THOMAS. pp. 302, 16 plates. Nelson, Edinburgh, 1958. 18s. Fresh translations by twenty-one scholars of texts from the countries surrounding Israel in Old Testament times, which shed light on her history, customs and legends in those days.

ISTIDENS KUNST. By O. KLINDT-JENSEN. pp. 127, 70 black-and-white illustrations, 4 colour plates. Forlaget Fremad, Copenhagen, 1959. Danish Kroner 9.75. A short attractive account of Upper Palaeolithic art: it is volume 70 in the *Kultur og Videnskab* series.

THE EXPLORATION OF TIME. By R. N. C. BOWEN. pp. 143 and 40 text figures. George Newnes, London, 1958. 21s. A good, handy summary of the various methods used in dating the past. 'What a long way,' Dr Bowen comments, 'we have come from *Homo diluvii testis*.' A reliable guide to our present state of knowledge of geochronology.

[continued on p. 43.]

Roman Windows and Grilles*

by GRAHAM WEBSTER

Mr Webster, formerly Curator of the Grosvenor Museum at Chester, is now Staff Tutor in Archaeology in the Department of Extra-mural Studies in the University of Birmingham.

THE problem of Roman windows and their furnishings has never been studied seriously in this country as so little evidence is usually forthcoming. Window glass is found in fair quantities on most sites and, where the pieces are large enough to indicate size, they would appear to be no more than 9 to 12 in. square, but there is little indication of how they were fastened into the window. Such technical details have unfortunately escaped attention in those countries where sufficient remains have been found to attempt reconstruction. While R. Herbig has discussed windows generally,¹ the most detailed treatment has been that by Vittorio Spinazzola in his survey of the excavations of *Via dell' Abbondanza* at Pompeii.² As he indicates, while houses were only of one story, the window openings tended to be very small slits but, as soon as an upper floor was built, more light could be obtained without sacrificing safety or privacy. Once the advantages of this became apparent, new and larger windows were inserted on the ground floor, architectural ingenuity being displayed in directing the light to particular parts of a room where it was needed. He touches upon the question of the infilling without adding much detail. Some of the smaller windows appear to have been openings in the wall with wooden, sliding shutters on the inside. The larger ones were filled with iron gratings in a form of a simple grille which has been reconstructed as horizontal flat bars, through which round vertical bars passed, a piece of construction which seems to be unnecessarily difficult. A grille, merely of crossbars, has also been found at Herculaneum. Others are filled with terra-cotta, stone or marble blocks pierced with openings (FIG. 1, *a*). This simple, but effective, type of window filling is one which might have been introduced into Britain and might explain some of the oddly shaped pieces of tile occasionally found. A development of this type is occasionally found in North Africa in the form of the *Fenestella Confessionis*. These small terra-cotta 'grilles' were evidently found to be very useful in preserving the privacy of the confession while allowing the penitent and priest the means of conversing. The present illustration (FIG. 1, *b*) has been taken from the published photograph of an example found on the site of the Roman settlement, *Columnata*, near Waldeck-Rousseau in the Department of Oran, Algeria, and is now in the Oran Museum.³ A similar example has been found in the donatist basilica at Aïn Ghorab in Numidia.⁴ In the house of Cuspius Pansa at Pompeii, twenty-five panes of *petra specularis*, a form of translucent stone, were found by a window opening on the upper floor. These were 15 mm. thick and

* This article owes much to Dr David Smith who kindly passed over to me many useful notes and references for my use.

¹ 'Fensterstudien an antiken Wohnbauten', *Mitteilungen des Deutschen Archaeologischen Instituts Roemische Abteilung*, Band 44, 1929.

² *Pompeii alla luce degli scavi nuovi di Via dell' Abbondanza* (1910-23), 1953, Chap. 3, 'Fenestre e problemi della luce'.

³ *Libyca*, 1 (1953), p. 286; for the identification of the site see p. 87, fn. 2 in the same volume.

⁴ *Revue Africaine*, lxxviii, nos. 366-7 (1936), pp. 32-3 and illustration. See also their use in post-Visigothic churches in Spain, etc., etc.

ROMAN WINDOWS AND GRILLES

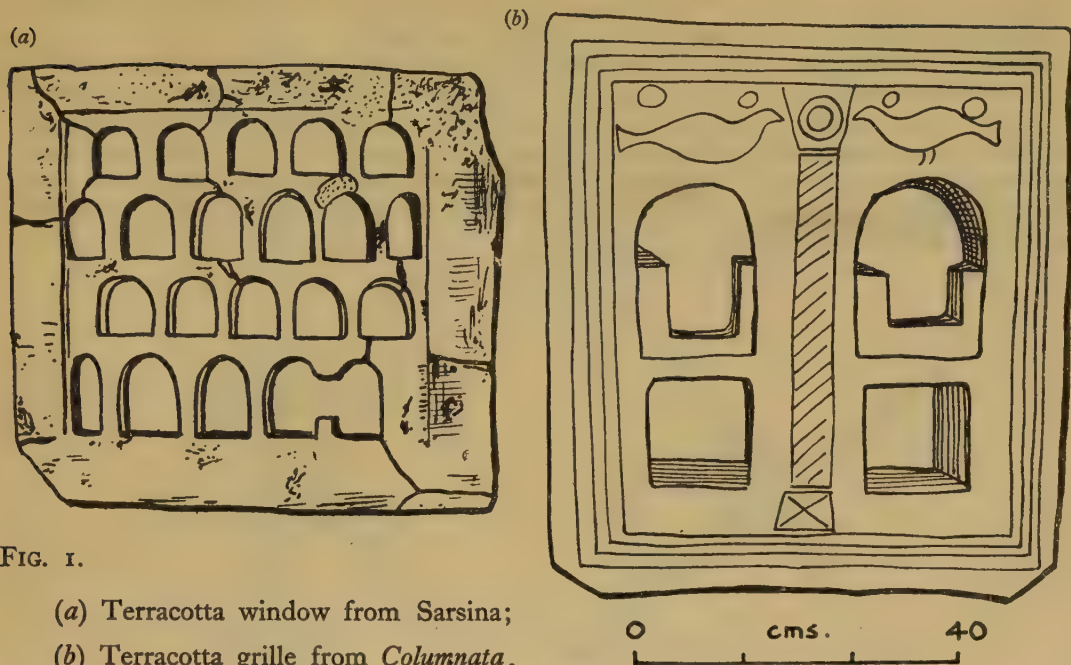


FIG. 1.

(a) Terracotta window from Sarsina;

(b) Terracotta grille from *Columnata*.

22 by 16 cm. square; with them, say the excavators, was some stucco, by means of which they were fixed to the rebates of the wooden frames. That the same means may have been used in Britain is shown by the pieces about 12 in. square, in Rochester Museum with pieces of mortar still attached.⁵ For the larger windows Signor Spinazzola has published some interesting reconstruction drawings showing balustrades and opening shutters, but the evidence on which these are based is not given.

Apart from the examples given above, window grilles appear to have been rarely found. Their chief characteristics can be seen in some of the wall paintings at Pompeii where imitation windows and doors are shown, as in the *atrium* of the House of Sallust (PLATE IV, a).⁶ There diagonal, as well as horizontal and vertical, bars are depicted, held together by means of large rivets at the points of junction, similar to the grilles still in position over the doorway of the Pantheon in Rome.⁷ Another example, but rather sketchy, is visible on a circus mosaic from Sicily assigned to the fifth century.⁸ The Latin word *cancelli*, in the plural, seems to apply to these grilles, but was used also for ironwork fixed to the top of the arena wall of the amphitheatre to prevent animals from reaching the spectators, as well as for gates and fences protecting parts of a building or barring an entry.⁹ Hence the word Chancel, that part of the church from which the public was originally excluded. One of the best examples of Roman date of this kind of construction, in the form

⁵ Lethaby, *Londinium, Architecture and Crafts* (1923), p. 32.

⁶ Dr H. G. van Beyen, *Die Pompejanische Wanddekoration*, Haag, 1938, Taf. 1, 1; also illustrated by A. Mau, *Geschichte der Decorativen Wandmalerei in Pompeii*, Berlin, 1882, Taf. II.

⁷ Starkie Gardner, *Trans. St Pauls Ecclesiological Soc.*, ii (1888), p. 185.

⁸ B. Pace, *I Mosaici di Piazza Armerina*, Rome (1955), fig. 31.

⁹ Daremberg, Saglio and Pottier, *Dictionnaire des antiquités grecques et romaines*.

of a bronze gate, was found at Wiesbaden in 1845, with six open-work panels, four of which are latticed diagonally and the others in a scale-like pattern.¹⁰

It would seem logical in a hot country like Italy to have some protection to keep out heat, dust and insects when necessary. Similarly in Britain, windows permanently open would let in the cold and rain as well as small animals. Glass was probably used only for small windows or where a heating system made it necessary. Normally, internal, wooden shutters would probably have been fitted, but in addition there would have been cases where some form of grille or grating was necessary to keep out would-be intruders, human and animal when the shutter was open.

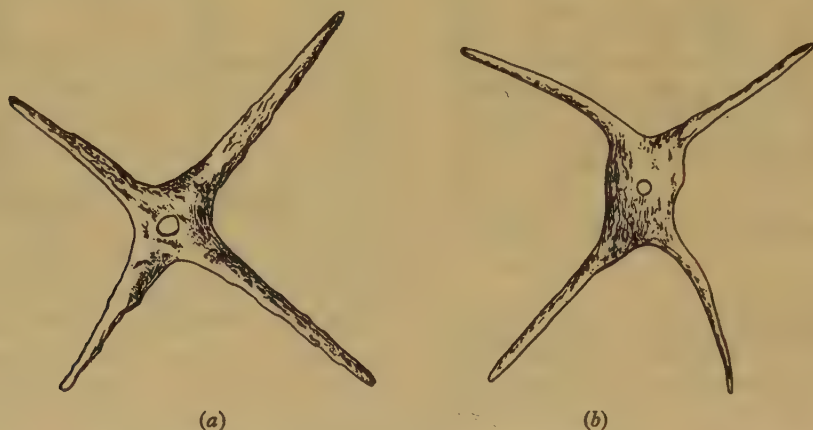


FIG. 2. (a) Cruciform grille from Kenchester (Hereford Museum ($\times \frac{1}{3}$)); (b) *Croisillon* from Caerwent (Newport, Mon. Museum ($\times \frac{1}{3}$)).

One of the minor mysteries in the archaeology of Roman Britain has been the function of the star-shaped objects of iron with a central hole. They occur widely in Britain and have been found, among other places, at Kenchester (FIG. 2, a),¹¹ Wroxeter,¹² Caerwent (FIG. 2, b),¹³ Silchester,¹⁴ London,¹⁵ and there is an unpublished example in the Black Gate Museum, Newcastle, unfortunately without provenance. Ward suggested that they were fastened to wooden windows and acted as fasteners to hold glass panes in position.¹⁶ His ingenious reconstruction¹⁷ has never been fully accepted, but no one has been able to suggest a better one. The same problem has puzzled Continental archaeologists. Léon de Vesly found some at the entrance to the Roman theatre at Lillebonne and called them *croisillons* (literally crossbars).¹⁸ It had occurred to J. Toutain when he discovered them in the forest of Compiègne that they were part of a grating (grille).¹⁹ Earlier finds of a similar nature had been made by Lesage during the excavation of the villa of Maulevrier in 1832

¹⁰ *Mainzer Zeitschrift* (1946), p. 14, Abb. 6.

¹¹ Jack, *The Romano-British Town of Magna (Kenchester) Herefordshire* (1916), pl. 48, no. 2.

¹² Excavation 1952-3, Report forthcoming.

¹³ Ward, *Romano-British Buildings and Earthworks* (1911), p. 271.

¹⁴ *Ibid.*

¹⁵ Lethaby, *op. cit.*, p. 32, fig. 19.

¹⁶ Ward, *op. cit.*, p. 272.

¹⁷ *Ibid.*, fig. 81.

¹⁸ 'Grillages ou croisillons de fer trouvés dans les fouilles du théâtre galloromain de Lillebonne', *Bulletin Archéologique du Comité des Travaux Historiques et Scientifiques*, 1921, pp. 63-6.

¹⁹ Cauchemé, *Description des fouilles archéologiques exécutées dans la forêt de Compiègne*, 2^e partie, pl. XI.

ROMAN WINDOWS AND GRILLES

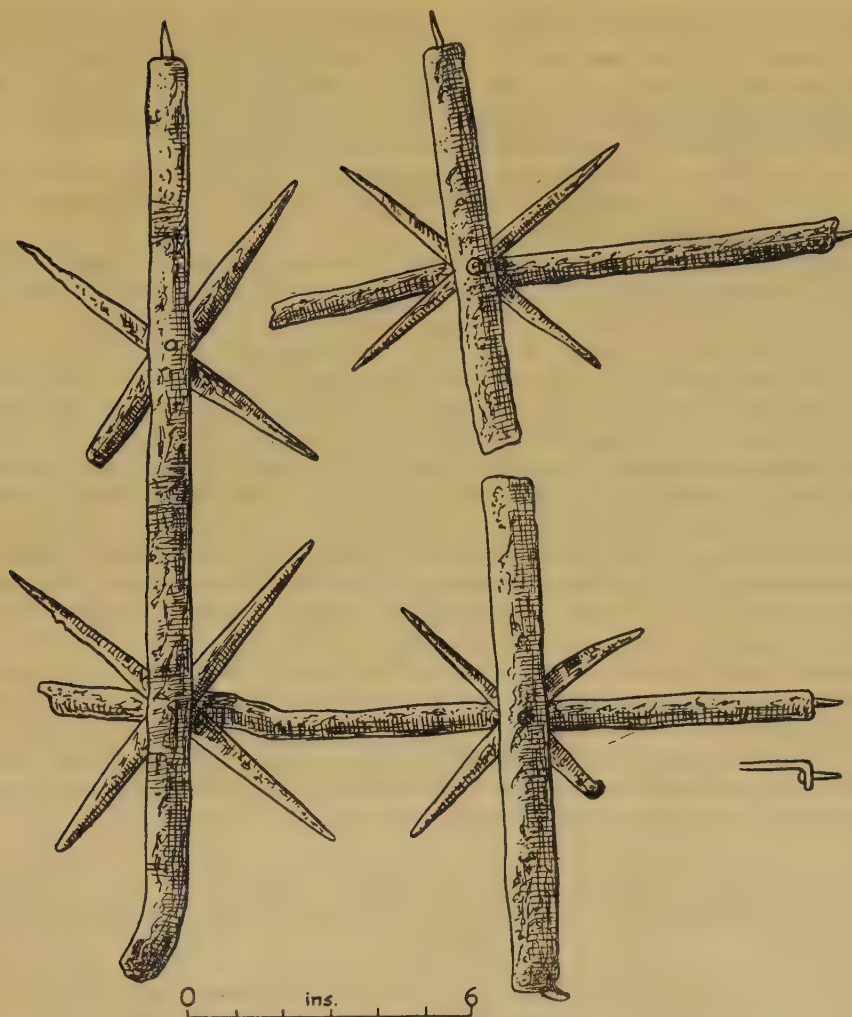


FIG. 3. Reconstruction of the Northampton grille, *croisillons* and bars.

and 1834.²⁰ The most useful work on the subject had been done by Abbé Cochet who illustrated examples from Caudebec-les-Elbeuf, Seine-Inférieure, and Sainte-Beuve-Épinay, near Neufchâtel, showing the method of construction and how the star-shaped pieces were in fact fastened to vertical and horizontal iron strips forming the lattice.²¹ In spite of this de Vesly, on the strength of a type from Lillebonne with a wavy arm projecting 18 cm., suggested that they were part of the top of a railing to protect spectators from wild beasts at shows, and quotes Ovid in support.²²

²⁰ L. Fallue, *La forêt de Brotonne et la villa de Maulevrier* (1837), p. 15.

²¹ *La Seine Inférieure historique et archéologique*, 2^e ed., figs. 1 and 2. Those from Epinay are illustrated in the *Victoria and Albert Museum Handbook on Ironwork* (1914), pt. 1, p. 51, with a circular example from the museum at Sainte-Germain which would seem to be of medieval origin.

²² *Amores*, III, 2, 64.

ANTIQUITY

More recently a large part of a grille has been found during the excavation of a Roman house at Hölstein in Switzerland and a full size model made for the Museum at Liestal and it has also been copied in the reconstructed *Domus Romana* at *Augusta Raurica*.²³ The publication of this shows for the first time the exact shape and function of these grilles and how they were fastened into the wooden frame (PLATE IV, *b*).²⁴

It is now clear that an earlier reconstruction based on the discovery of a fragment at Saalburg is not entirely satisfactory²⁵ although there may well be alternative methods of fastening the grille to the window frame.

For the last eighty years the solution to the problem has been on public display in Britain at Northampton Museum. Both essential parts of the grille, *croisillons* and bars in association were found at Duston about 1870. Although not complete, there is sufficient of this grille to allow a full reconstruction (FIG. 3). It fitted an opening 20 in. square and consists of four bars, each 1 in. wide, riveted at right-angles to each other, with their ends turned over to enable the grille to be fastened into its wooden frame; and six of the nails survive in position. At the four junctions are fixed the *croisillons*, each about 9 in. long, clearly designed to discourage intruders. There is little doubt that a careful examination of Roman ironmongery lurking in our Museums would produce further examples. Nor must we expect all examples to be of the same general pattern. There are, for example, the two unusual trident shaped pieces of iron from Baginton, near Coventry,²⁶ and others from Templeborough²⁷ where they were wrongly identified as fish spears. These may well be found to be a type of window grille although the proof is at present lacking. These bear a superficial resemblance to the very strange object from Woodeaton²⁸ which in turn is not unlike the bronze rattle from Alexandropol,²⁹ the kind of object to be expected from a temple site. Nor must these decorative pieces of ironwork have been always necessarily for grilles or doors; they could equally well have strengthened wooden doors or shutters as the example of a Swiss shutter-guard at Amsteg, Altorf, clearly shows,³⁰ very similar to a piece of ironwork from the Roman site at Arentsburg in Holland.³¹ With these examples to be considered, it would be unwise to reach any hasty conclusions.

NOTE. After the above reached proof stage, I found another fragment of a grille from London, in the British Museum. (Acc. No. 1926, 10-19, 51). This consists of a bar, 1½ in. wide, one *croisillon*, 4½ wide, in position with a short piece of the cross-bar and a rivet hole for the next *croisillon*, 6½ in., along the bar.

²³ *Jahrbuch Schw. Ges. f. Urg.* (1951), p. 121; the original metalwork is illustrated in Taf. xvii.

²⁴ *Ur-Schweiz*, xviii, Nr. 1 (1954), 'Ein römisches Fenstergitter aus Hölstein', p. 15.

²⁵ *Saalburg Jahrbuch*, vi (1927), Taf., ix, no. 22; the reconstruction is shown in Text abb. 21 and 22. I am grateful to Dr Hans Schönberger, the Director of the Saalburg Museum for drawing my attention to this.

²⁶ *Proc. Coventry and District Natural History and Scientific Society*, ii (1951), no. 5, fig. 12.

²⁷ May, *The Roman Forts of Templeborough, near Rotherham* (1922), pl. xvii, no. 3.

²⁸ *Oxoniensia*, xix (1954), p. 29 and pl. IIIa.

²⁹ Tamara Talbot Rice, *The Scythians* (1957), fig. 17.

³⁰ Winthrop Kent, *Architectural Wrought Iron, Ancient and Modern* (1888), p. 16, no. 3.

³¹ Holwerda, *Arentsburg*, Leiden (1923), pl. LXX, afb. 108—lower right hand corner.

New Wares and Fresh Problems from Baluchistan

by BEATRICE DE CARDI

Miss de Cardi, Assistant Secretary of the Council for British Archaeology, first visited Baluchistan in 1948. In 1957 she led an extensive archaeological reconnaissance through Central Kalat, and in this article summarizes the results of some of her work there.

IT is perhaps axiomatic that archaeological research in Baluchistan should raise as many questions as it answers, and the fieldwork carried out in Kalat in 1957 was no exception. Gradually, however, the nature of these problems is changing.

Prior to 1950 a superfluity of unrelated wares confronted the prehistorian and obscured the wider issues. Much of this pottery had been collected by the late Sir Aurel Stein from the numerous wind-eroded *damb*s which represent the mudbrick walls of ancient settlements. In the absence of any scientific excavation in this region it was difficult to relate the different painted wares or to group them into cultural assemblages, and the emphasis lay firmly on decorated pottery, since there was even less hope of sorting out unstratified plain wares.

The scene, therefore, was one of ceramic chaos until Professor Stuart Piggott's *Pre-historic India* provided the working hypothesis essential to further progress. At first it seemed possible to distinguish a concentration of buff-ware cultures in southern Baluchistan and Sind from the red-ware cultures localized in the north, a classification based upon the zoning of prehistoric cultures in Iran. Subsequent fieldwork has shown that this distinction is no longer tenable in Baluchistan where red-wares now extend southwards through central Kalat, buff-wares are found in the Quetta region, and identical designs adorn both red and buff wares on a number of sites.

It has, however, been possible to build up a tentative cultural sequence by comparing Baluchi wares with pottery found during excavations in Iran and Mesopotamia where a sound chronology has been established. The distinctive animal patterns of Rana Ghundhai in the Zhob could, for example, be derived from the Hissar culture of north-eastern Iran. The bold geometric designs of Quetta-ware could be traced to southern Iran in a context which suggested an early date for it in the sequence of Baluchi cultures. The simple polychrome pottery of the Amri culture in Sind was known from excavation to pre-date the Harappa culture of the Indus valley, but its exact relation to the more sophisticated and probably later wares of Nundara and Nal in Kalat has yet to be determined. A relatively late date was suggested for the Kulli culture of southern Baluchistan because of its stylistic similarity to Scarlet Ware from the Diyala region of Baghdad and from the occurrence on Kulli sites of carved stone hut-urns comparable to vessels from Early Dynastic Sumer.

Such, in essence, is the tentative sequence evolved by stylistic analysis. The method has its dangers and it fails completely in the case of wares unknown outside Baluchistan. It has, however, produced the general framework into which the numerous unrelated wares may eventually be fitted as research proceeds. The immediate need, therefore, was—and is—for trial-excavation on sites where surface-finds hold hope of relating 'stray' wares to the known cultures.

ANTIQUITY

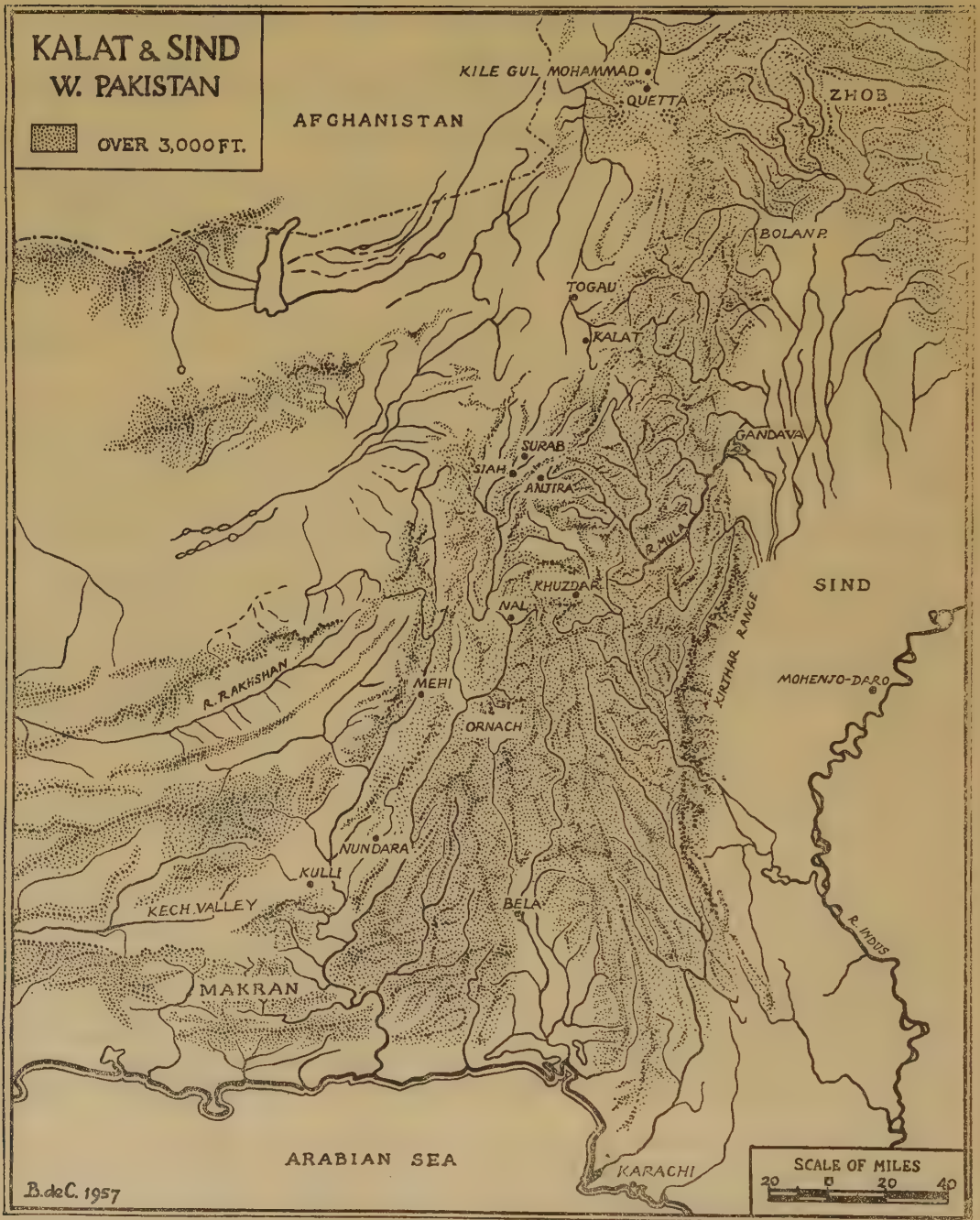


FIG. 1.

NEW WARES AND FRESH PROBLEMS FROM BALUCHISTAN

A start was made in 1951 in the Quetta valley when an American expedition produced some semblance of order in the wares of that region.¹ The earliest culture found was that of Kile Gul Mohammad which, in its fourth and final period, could be related to the first phase of the Quetta culture, thus pushing back the general sequence. The importance of Kile Gul Mohammad ware lies in the fact that it had a wide range, extending even beyond the Surab district of central Kalat, where I had found it with other wares, including Nal, on several sites discovered in 1948. Could it be used to relate the cultures of the north to those of central Kalat? There seemed every chance that this might be the case.

Our purpose in 1957 was to establish the chronology of central Kalat, linking it if possible with the Quetta valley and providing a spring-board for fieldwork in the south. The Surab district was chosen as our base for a number of reasons. As the focal point of the main routes through Baluchistan it promised a wide variety of wares; fifteen sites were known and both labour and water were relatively plentiful. We started work at Anjira where floods had swept away half the mound exposing four periods of occupation in the cliff-face (FIG. 2). Helped by this ready-made section, 750 ft. in length, it was possible to recover the full stratigraphical sequence on the site; a sequence later confirmed by excavation at Siah-damb, seventeen miles away.

The pattern of settlement in the Surab region falls into three parts. It begins at Anjira with the arrival of a semi-nomadic people who camped on the gravel hillock overlooking the river. Their domestic rubbish was meagre but informative. The pottery consisted of hand-made vessels and a finer ware, probably made on a tournette, identifiable as Kile Gul Mohammad.² A distinctive feature of this buff ware is its rich red, and sometimes burnished, slip. Simple geometric patterns decorated the few flat-based bowls and small-mouthed jars which were the commonest forms in use (FIG. 3 (1)).

Associated with this pottery was a flake-blade industry of Neolithic type, comprising chert scrapers, gouges, short blades and perhaps a leaf-shaped arrow-head. Colonel D. H. Gordon, who very kindly examined the 128 pieces available, has pointed out that the absence of geometric types gives the impression of an assemblage in which such implements have mostly been discarded, apart from the occasional lunate, though it is possible that work on a larger scale might reverse this view. The material from Anjira was of the same type as Kile Gul Mohammad I-IV, and the industry is comparable to that found in the Neolithic levels of the Ghar-i-Kamarband, the Belt Cave, and of Sialk I-III. It assumes an importance out of keeping with its quality because Anjira is one of the few Baluchi sites in which a pre-Harappan flake-blade industry has been found in stratified deposits.

The implements and pottery of Anjira I continued in use during the next period when mudbrick walls set on rough boulder footings marked the beginning of settled as distinct from semi-nomadic occupation and two other wares appeared. One was a curious buff-ware coiled and moulded inside a woven basketry frame over which the heavy tapering rim projected (PLATE V (1)). These basket-marked vessels occurred with Kile Gul Mohammad pottery on the type site also and surface-finds elsewhere in Kalat suggest that the ware belongs to that cultural group. Few analogies can be cited from adjacent countries, apart from Said Kala Ghundhai³ near Kandahar which is too close to Baluchistan to count. Further afield mat and cord-marked pottery has been found on Neolithic sites in Siberia

¹ Walter A. Fairervis, Jr., 'Excavations in the Quetta Valley, West Pakistan', *Anthropological Papers of the American Museum of Natural History*, 45, 2, New York (1956). [Reviewed in *ANTIQUITY* 1958, 43.]

² *Ibid.*, Fig. 50.

³ Walter A. Fairervis, Jr., 'Preliminary Report on the Prehistoric Archaeology of the Afghan-Baluchi Areas,' *American Museum Novitates*, no. 1587, 12 September, 1952, 24.

ANTIQUITY

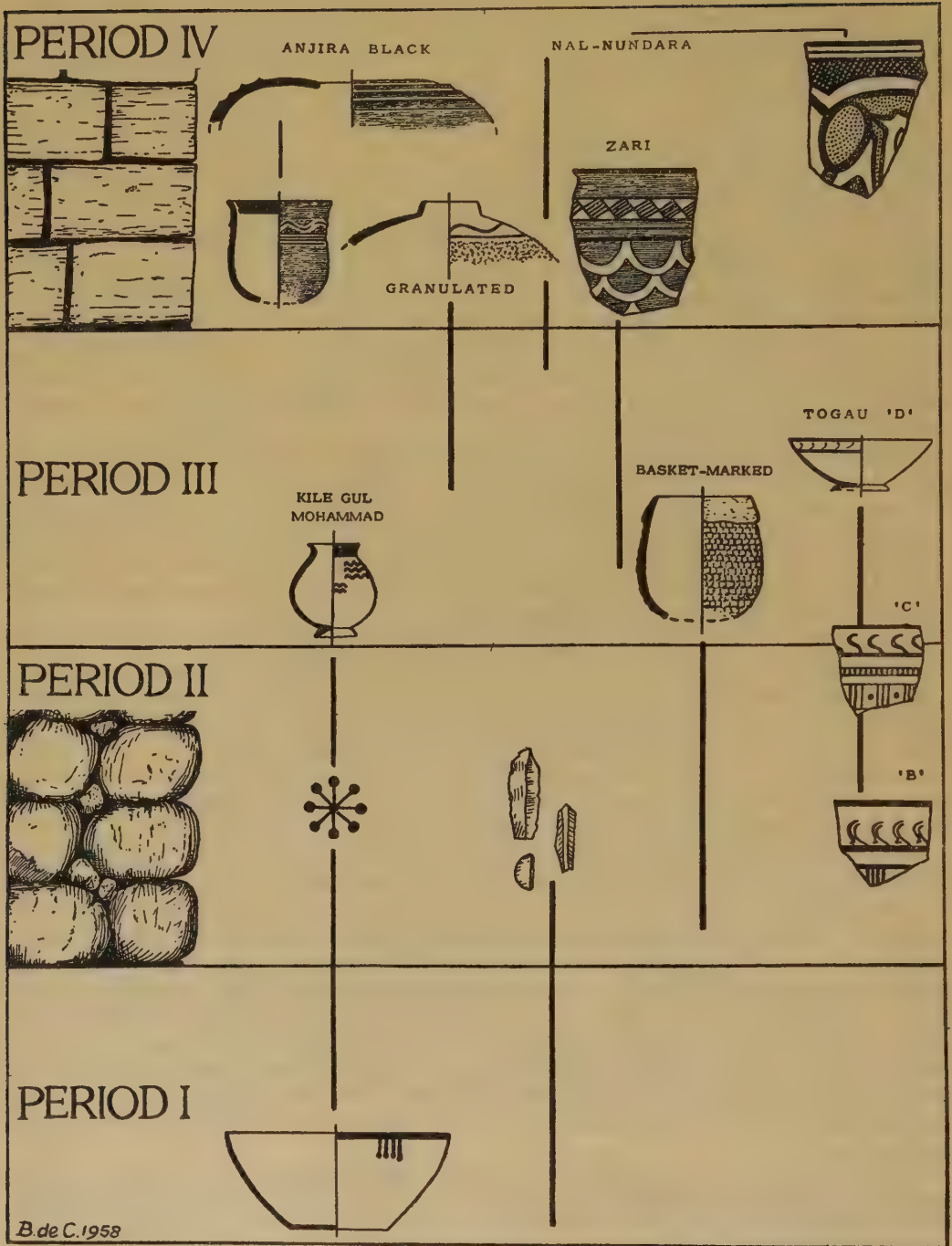


FIG. 2. Diagram illustrating the sequence of wares at Anjira (not to scale).

NEW WARES AND FRESH PROBLEMS FROM BALUCHISTAN

and other parts of eastern and south-western Asia and examples of less certain date were noted at Burshom in Kashmir.⁴

The other ware found in the second period of occupation at both Anjira and Siah-damb was first recognized from surface-finds at Togau⁵ in northern Kalat. The interest of this ware lies in the fact that the patterns used on the bowls showed a development in time which could be confirmed stratigraphically at Siah-damb. In its earliest stage the Togau frieze (FIG. 3 (2A)) consisted of a single row of processing animals, usually caprids, but occasionally birds, and in one instance linked human figures. These shadow figures invariably face left and are painted in solid black on a light orange-red slip. No stratified examples of Stage A were found at Siah-damb, although they were seen on the surface. The body of the animal is suppressed in Stage B, leaving only the neck, head and horns. By Stage C the heads and horns had become simply an abbreviated fringe of single horns or hooks, occasionally reversed towards the right. The final Stage D was marked by further deterioration; the design, now barely recognizable or even visible, is painted in black on a black ground produced by different firing in the kiln—a change which coincided with the beginning of black-slipped Anjira-ware in Period III. These friezes are known from many sites in Baluchistan and are sometimes combined with such patterns as a ball within a panel (FIG. 3 (2)) or tasselled loop (FIG. 3 (2)). Unilateral ladder patterns and 'stitching', also noted on Kile Gul Mohammad ware, appear on deeper vessels and jars.

The motifs on both Kile Gul Mohammad and Togau wares, though limited, are sufficiently distinctive to point to their origin on the Iranian Plateau. Four Kile Gul Mohammad patterns can be recognized in Sialk I.⁶ The dot-tipped rosette, however, does not appear before Sialk III 2 and Hissar IB, when it is used inside the horns of ibex, and independently in Hissar IC.

Patterns ancestral to Togau occur in the Hissar culture, even the 'skid' position noted by McCown in the Hissar animal patterns being repeated in the Togau friezes.⁷ Linked human figures similar to the Siah sherd are found in Sialk III 4-5⁸ and on other Iranian sites of a comparable date.

The evidence from Baluchistan suggests that contact with Iran was maintained over a period of time. At Kile Gul Mohammad a carbon 14 date of 3300 ± 200 years B.C. was obtained for the upper levels of the earliest period. Hand-made and basket-marked pottery was found with chert implements in Period II which can probably be equated with Anjira I. The next point in our chronology has been supplied by Soviet archaeologists, whose recent excavations at Namazga Tepe in Turkmenistan produced material related to Hissar IC and Sialk III for which a carbon 14 date of 3000 ± 300 years was given.⁹

If the Kalat sequence reflects developments in north-eastern Iran, there is no reason to believe that a long time-lag was involved in the spread of Hissar ideas to Baluchistan. There are no geographical obstacles, apart from distance, to be overcome until Kalat is reached.

⁴ Lauriston Ward, 'The Relative Chronology of China through the Han Period'. Ehrlich: *Relative Chronologies in Old World Archaeology*, Univ. Chicago Press (1954), 134.

⁵ B. de Cardi, 'On the Borders of Pakistan: Recent Exploration', *Journ. Royal India, Pakistan and Ceylon Soc.*, 24, 2 (1950), 54.

⁶ KGM. vertical rows of wavy lines, cf. Sialk I, R. Ghirshman, *Fouilles de Sialk, près de Kashan*. I (1938-9), pl. XL, A4, B2, D9; XLI, B9, D1. Cross-hatched pendant triangles, pl. XL, A3; XLIV, D8. Over-all streaked triangles, XL, D4, 5, 4; XLI, A14; XLII, C8; small pendant lines, XLII, C4.

⁷ Donald E. McCown, 'The Comparative Stratigraphy of Early Iran,' *Studies in Ancient Oriental Civilization*, 23 (1942), 18 note.

⁸ Ghirshman, *Sialk*, pl. LXXV, 1-2, 5, 7; LXXIX, A7; LXXX A1, C6-8.

⁹ V. M. Masson, *Sovetskaya Arkheologiya*, 4, 44-54.

ANTIQUITY

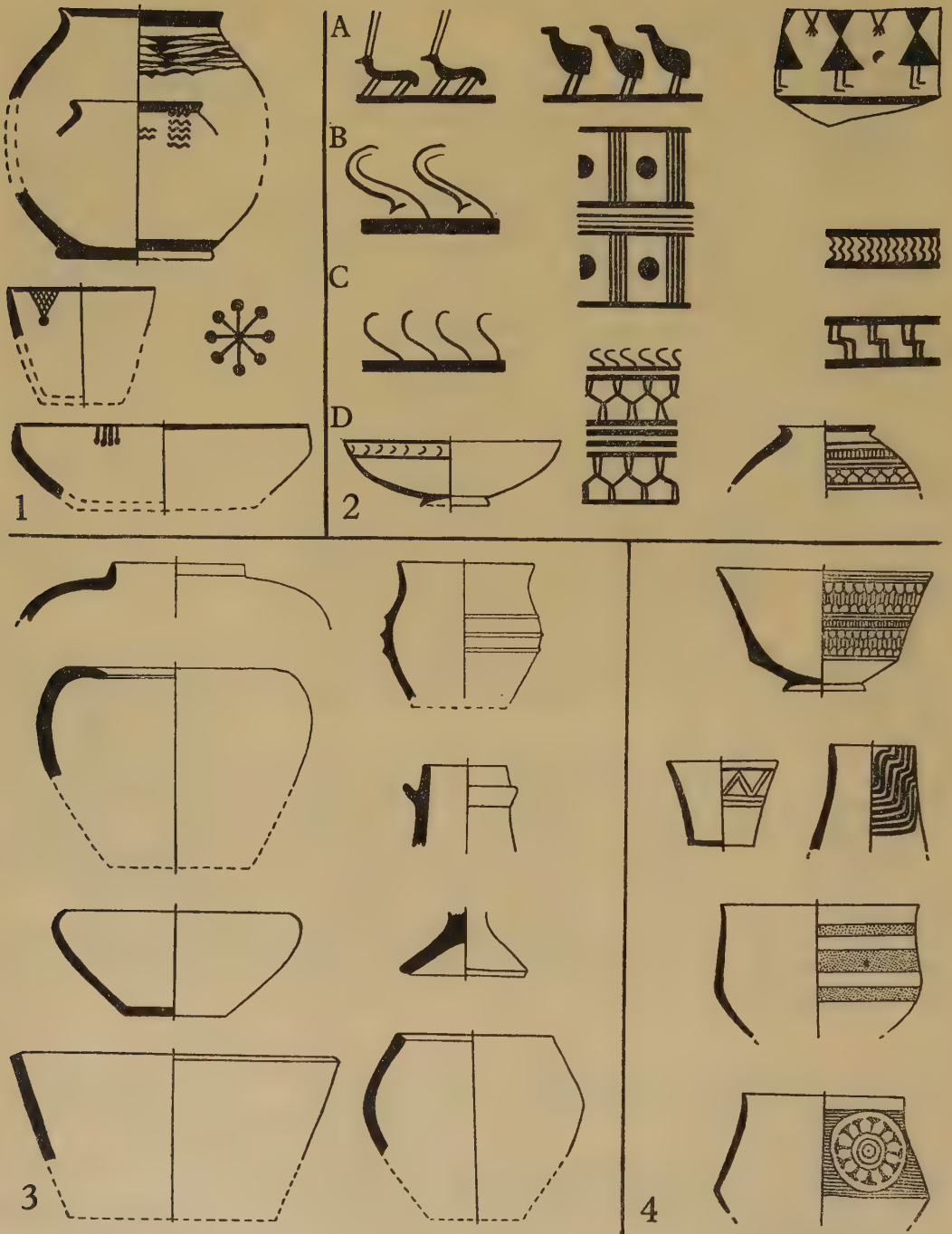


FIG. 3. Forms and designs: 1. Kile Gul Mohammad-ware; 2. Togau-ware; 3. Anjira-ware; 4. decorated wares from Anjira, Period IV (not to scale).

NEW WARES AND FRESH PROBLEMS FROM BALUCHISTAN

Hissar influences can be seen in the Zhob¹⁰ and in the Togau-ware of northern Kalat; in Sind they are represented only by a few sherds of Togau-ware in its later stages C and D. Is this pure coincidence or does it in fact reflect the spread of Hissar ideas through Kalat?

New ideas, if not new people, appeared in the Surab region during Period III, arriving perhaps from a different direction. Roughly square stone replaced the boulder footings of Anjira II and the settlement spread beyond the central hillock upon which it had been founded. Expansion continued during Period IV which was notable for the excellence of its masonry. Well-squared stone foundations supported mudbrick walls and, where traceable on the surface, the buildings appear to have been carefully aligned and separated by narrow lanes. Crowded it may have been, but the settlement shows signs of planning and was no haphazard jumble of huts.

Further evidence of change during Period III is afforded by the disappearance of chert implements—a whetstone may imply the use of metal—and the introduction of new ceramic styles. Togau-ware, now in Stage D, continues, but shows signs of technical experiment. The problem is to decide whether the new wares can be regarded as part of a single cultural assemblage. Are the differences in form and decoration purely functional, or do they reflect the tastes of a community of mixed stock? Stylistically, much of the fine painted pottery of Periods III and IV belongs to the Nal-Nundara culture and little need be said about it in this context. The relation of the plainer wares is less certain and they have therefore been treated as separate products until they can be proved otherwise.

There is, for example, the polychrome Zari-ware (PLATE I), named from a site near Siah-damb. A characteristic of this ware is its use of white paint outlined by black bands on either a red or greyish-black slip. Large globular jars were often painted with bold scalloped curves or a wide band of finely hatched diamonds on a white ground.¹¹ The white paint points at once to some connection with the Kechi Beg polychromes¹² of the Quetta valley which must be roughly contemporary, while the diamond pattern is reminiscent of Amri and Nal. There the resemblance ends, for none of these cultures has as yet produced the short-necked jars so typical of Zari-ware.

Related stratigraphically and similar in shape were jars in a buff-ware deliberately roughened by adding sand to the slip. The ware is not recorded from other parts of Baluchistan, but pots with a granular surface were noted at Amri and two other sites in Sind.¹³ The technique clearly had a practical purpose. Modern Sindhi water-pots are similarly coated to keep their contents colder. This may explain their purpose and why only one shape was made. Few granulated pots were decorated, but one was coated with the black slip characteristic of Anjira-ware with which it could thus be related.

The discovery of a black-slipped buff ware is of considerable interest as it implies a ceramic technique alien to Baluchistan. It appeared towards the end of Anjira III, but only became dominant in Period IV. The pottery is wheel-thrown and may be either black or red, depending on the state of oxidation of the iron present. Firing at above 1100° C. has produced an exceedingly hard ware; in fact, it is difficult to find comparable ceramics in Europe before the rise of stoneware.¹⁴ About a dozen different forms were found (Fig.

¹⁰ S. Piggott, 'The Hissar Sequence—the Indian Evidence', *ANTIQUITY* xvii (1943), 169–82.

¹¹ Professor M. E. Mallowan has drawn my attention to certain Jemdet Nasr sherds which are similar to Zari-ware both in design and their use of white paint.

¹² Fairervis, *Quetta Valley Report*, 354.

¹³ At Ahmad Shah and Rajo-dero. Krishna Deva and D. E. McCown, 'Exploration in Sind', 1938, *Ancient India*, 5 (1949), pl. vii, 78, and pp. 26, 30.

¹⁴ I am indebted to Miss Mavis Bimson, of the British Museum Laboratory, for her comments on Anjira-ware which are in part included in the description given above.

ANTIQUITY

3 (3 and 4)) ranging from large jars, which made up 30 per cent of the counted sample of 380 specimens, to bowls of varying shapes, a collared flask and some miniature pots. Decoration usually consisted of one or more straight or wavy cordon. Occasionally the wavy cordons were transformed into snakes—obviously cobras, with expanded hood and forked tongue clearly marked. More rarely, and only at Anjira, relief decoration took the form of twisted sheep's horns, with or without a full face head. The black slip was sometimes used with other decorative techniques, such as the granulated ware, and one sherd bore a reserved panel on the shoulder with a simple curvilinear design which can be paralleled at both Nal and Kulli.¹⁵

Associated with these varied wares in Periods III and IV were Nal-Nundara cups and beakers with designs in black and red, part of a canister and shallow lobate bowls. The use of blue, yellow or green, so typical of Nal, was rare. In general the motifs fell into three groups: zoomorphic, naturalistic and geometric. Of these the most common were the animal patterns depicting humped bulls, goats, lean greyhound creatures, fish and felines, the black outlines of their bodies filled in with plum-red paint. Popular plant forms included pinate leaves, stylized flowers, and the *pipal* leaves and petalled rosette found on Harappa pottery.¹⁶ The geometric group contained patterns common to Amri and Nundara and the multiple outlining associated with Nal (PLATE I).

Beakers with a zone of spots set below animal patterns and divided by a cordon were similar in style to the zoomorphic polychromes already described. Spotted zones and in-fills have not hitherto been associated with either Nal or Nundara; they occur on a sherd of Kulli type from the upper levels of Mohenjo-daro¹⁷ and, less closely analogous, on a ware found in Sind.¹⁸ A feature so far unparalleled is the use of a finely cross-hatched background following the curves of the emaciated beasts portrayed on both the spotted and polychromes pots. Related stratigraphically to both these wares, but distinct from either, was a thicker cream-slipped ware on which animals, perhaps felines, were boldly outlined without other background elements. The fluid style and delineation of the haunch immediately suggest comparison with Nal.¹⁹

The evidence of the later painted wares suggests that the Surab sites provide, for the first time, the full ceramic assemblage of the Nal culture. Only the plainer household wares remain unrelated to the pottery known from the cemetery at Nal; in fact, the kind of wares which would not have been deemed suitable as grave-goods when more attractive pottery was to hand. Black Anjira-ware could conceivably have been used for funerary purposes and it is tempting—but dangerous—to identify it with the dark-slipped cordoned pots reported from Nal.

Looking further afield, we find Nal and Anjira-ware together on the surface of several sites in southern Baluchistan,²⁰ and on Thale Damb Kulli pottery was also present. Ironi-

¹⁵ H. Hargreaves, 'Excavations in Baluchistan: Sampur Mound, Mastung, and Sohr Damb, Nal'. *Mem. Arch. Surv. India*, 35 (1929), pls. xvi, 24; xix, 13 R.F.I.; xxi, 15. A. Stein, 'An Archaeological Tour in Gedrosia', *Mem. Arch. Surv. India*, 43 (1931), pl. xxi, Kulli 1.

¹⁶ E. Mackay, 'Chanhu-daro Excavations', 1935-36, *American Oriental Ser.*, 20 (1943), pls. xxxii, 1, 4; xxxiii, 1, 11, 16. Rosettes occur in the Harappa levels at Amri and Chanhu-daro and on sherds from the defences at Harappa. The motif also appears on a bowl from the lower levels of Kot Diji in Sind, ascribed to a pre-Harappa period. F. A. Khan, 'Before Mohenjo-daro: New Light on the Beginnings of the Indus Valley Civilization, from Recent Excavations at Kot Diji', *Illus. London News*, 24 May, 1958, 867, Fig. 3.

¹⁷ Deva and McCown, *Ancient India*, 5 (1949), pl. vi, 70.

¹⁸ At Trihni and Shah Hasan. N. G. Majumdar, 'Explorations in Sind', *Mem. Arch. Surv. India*, 48 (1934), pl. xxiii, 30, 39.

¹⁹ Hargreaves, *Mem. Arch. Surv. India*, 35 (1925), pl. xxi, 8.

²⁰ Badrang-damb, Pak and Thale Damb. Stein, *Gedrosia*, pls. ii, B.R.18; xx, Pak. 1, Thal. 2, 6.

NEW WARES AND FRESH PROBLEMS FROM BALUCHISTAN

cally, it is the association of Anjira-ware with Kulli, the one Baluchi culture with strong external contacts, which establishes its relative date, for a black-slipped cordoned ware is recorded from both the Kulli levels of Shahi Tump and the type site. At Shahi Tump it was associated with an incised pottery hut-urn of the rather debased type found in north-eastern Iran in a late Akkadian context (c. 2000 B.C.).²¹

Anjira-ware thus confirms the partial contemporaneity of Kulli and Nal, but further work on several sites is needed to find out which culture was the earlier. I stress the need for investigating more than one site in southern Baluchistan because Stein's surveys show a concentration of both Kulli and Nal sites in the Kech valley, where they are often located within a few miles of each other. If the later history of Kalat is any criterion, such a situation would inevitably have led to tribal conflict and it is necessary to remember that these settlements may well have changed hands as a result.

There is a postscript to our work on the Surab sites. Although erosion had removed all stratification subsequent to Anjira IV, surface sherds and pottery from the upper levels provided evidence of contact with, if not the arrival of, people usually associated with northern Baluchistan. Finely ribbed and stippled buff-wares (PLATE V (11)) immediately recall material from the Zhob.²² More useful as dating material are the circle-stamped jars of Quetta wet ware (PLATE V (12)) and dishes of Faiz Mohammad Grayware²³ (PLATE V (10)), which were found at Mian Ghundhai in the later stages of the Quetta culture; a horizon with a carbon 14 dating of 2100 ± 200 years B.C.

Quetta wet ware—almost identical with Romano-British rustic ware—has been found in the lower levels of Mohenjo-daro²⁴ and on the surface of two mounds in the Bolan Pass with Kulli and Harappa pottery.²⁵ I discovered it with Faiz Mohammad Grayware on a new and extensive Harappa site in the entrance to the Mula Pass near Gandava last year. What does this imply? Hardly a trade in ceramics via the Bolan and Mula Passes for few pots would have survived the journey, but perhaps transhumance was practised in the second millenium B.C. as it is to-day, the tribes of the highlands moving down to the plains each winter to escape the cold.

No true Quetta-ware was found on the Surab sites, but several platters bore similar geometric designs in black on a red instead of buff ground (PLATE V (13)). In one case the design had been inverted and the use of a dark slip with wavy comb incising on the outside of the dish suggests either an Anjira potter's experiment or the decadence of the Quetta culture. The absence of black on buff Quetta-ware south of Kalat town is puzzling if its sources lay, as proposed, in southern Iran. And how is it that the apparently associated Faiz Mohammad Grayware has a wider distribution, ranging from the Zhob to Seistan and Persian Makran?²⁶ Questions outnumber the answers we can give and call for further field-work in other districts.

An impressive sequence has been built up in the Surab region, beginning with a culture of Iranian derivation about 3000 B.C. Stagnation followed until the arrival of Nal-Nundara people, who remained in control of the area until c. 2000 B.C. or a little later, when northern

²¹ R. E. M. Wheeler, 'Harappa 1946: the Defences and Cemetery R.37', *Ancient India*, 3 (1947), 80.

²² A. Stein, 'An Archaeological Tour in Waziristan and Baluchistan', *Mem. Arch. Surv. India*, 37 (1929). Periano-Ghundai: pl. VIII, P.S.W.38; pl. VI, p. 80; Moghul-Ghundhai, pl. XI, M.M.N.49.

²³ Fairservis, *Quetta Valley*, Fig. 55, 263-4.

²⁴ E. Mackay, *Further Excavations at Mohenjo-daro*, II (1937), pl. LXVII, I. 2; I (1938), 184.

²⁵ Fairservis, *Quetta Valley*, 200, 352.

²⁶ Zhob: D. H. Gordon, 'The Pottery Industries of the Indo-Iranian Border: a Restatement and Tentative Chronology', *Ancient India*, 10-11 (1954-5), Fig. 10, 174-5. Seistan: Fairservis, *Am. Museum Novitates*, 15, 87, 12 September, 1952, 30. Bampur material in the British Museum.

ANTIQUITY

influences appear. The next step clearly is to see how far this sequence applies to other regions and by trial-excavation to recover both the geographical and temporal pattern of settlement in Baluchistan.

Our excavations near Surab had given us more than enough material to digest—in fact, at the time, we felt too much—but news of a Harappa site took us to the Ornach valley south of Nal.²⁷ There, thanks to Sardar Alem Khan, head of the Bizanjau tribe, our survey yielded eight sites, of which Kinneru and Nindo were of great interest. These settlements differed architecturally from the majority of sites in Kalat, being built of heavy stone masonry with little trace of mudbrick, and showing signs in each case of a higher central mound—perhaps a citadel.

The pottery falls into three groups: local Baluchi wares, including Kile Gul Mohammad, Togau, Kulli and a little Nal; Harappa pottery; and lastly, wares similar to Harappa, but not present on Indus valley sites. It was clear from even limited trenching that the main occupation at Nindo, the largest settlement, had been Harappan, with the addition of non-Indus elements. Similar pottery was found at Kinneru, ten miles away, where a polished and perforated stone *linga* weighing about 30 lb. was preserved in the village. It has exact parallels at Mohenjo-daro.

An association between the Kulli and Indus people has long been recognized in central Kalat, where Harappa pottery at Kulli, Mehi and elsewhere has been regarded as evidence of trade. The Ornach sites are no mere trading-posts; they are clearly settlements of a large and permanent nature. Their implications are less obvious. Have we here the earliest phase of Harappa—as yet unexcavated in Sind—or is it the culture *in extremis*, brought by refugees seeking safety in the hills when the Indus settlements fell before invaders? The answer is not clear from an analysis of the pottery because the persistence of Harappa types makes it difficult to relate the Ornach material to any particular phase of the culture. Both the distinctive incised pattern used on offering stands (PLATE VI (8)) and a reserved slip-ware comparable to sherds from Nindo (PLATE VI (4)) are found in the lower levels at Mohenjodaro, but the culture was even then mature.

More notable were certain differences between the Indus and Ornach groups. There were, for instance, none of the thin peg-based pots with ribbed zone or the fine unsurfaced pink wheel-turned ware common at Mohenjo-daro. Nor did search produce a single example of the shell and clay bangles so numerous on Indus sites. Figurines abounded, including a theriomorphic pot, but none were characteristic of the Harappa culture. The goddesses wore hair style and necklets of Kulli type and the small humped cattle bore painted stripes. Many had the flattened peg nose of bulls on Kulli pots, a feature also found on two figurines from Mohenjo-daro, again in the lower levels.²⁸

This mixed Kulli-Harappa culture calls for early investigation, not simply in Ornach, but on the Bolan sites mentioned above (p. 23), where it might be related to the Quetta sequence. My survey of the Mula River and Gandava region produced twenty-two new sites. Ten bore varied prehistoric wares, but Harappa sherds occurred on two mounds midway down the Pass, one near Jahan being of particular interest since its ceramic content showed that it might link the Harappa culture to the Surab sequence. Again the solution lies in excavation, wider in comprehension than in execution, and planned for a region ideally suited to archaeology on a shoestring.

²⁷ I am indebted to Mr. R. L. Raikes, who discovered Kinneru, for this and much other helpful information.

²⁸ E. Mackay, *Mohenjo-daro*, pl. LXXIX, 22, 23.

The Historical Sack of Troy

by DENYS PAGE

The fourth and concluding volume in the series giving detailed reports on the excavations at Hisarlik between 1932-8 by the Archaeological Expedition of the University of Cincinnati was published last year (Troy; Volume IV, in two parts. By C. W. Blegen, C. G. Boulter, J. L. Caskey, and M. Rawson. See Book Chronicle, ANTIQUITY, 1958, 292). In this article the Regius Professor of Greek in the University of Cambridge reviews this volume and sets its achievement and that of the whole Cincinnati expedition in its general historical contexts. The three previous volumes of this great undertaking were all reviewed in ANTIQUITY by the late Professor Gordon Childe (Volume I, ANTIQUITY, 1951, 51; Volume II, ANTIQUITY, 1952, 158; Volume III, ANTIQUITY, 1954, 63).

THE site of Troy was first occupied by men at some time not long before or after 3000 B.C. What they built on the bedrock was the fortress of a chieftain, a few large well-furnished houses within an oval of stout walls. After some 500 years the stronghold was consumed by a great fire; and the same people rebuilt a far bigger and stronger Troy, the Second City, with massive walls and monumental gates, and a great palace or temple on the summit of the enclosed hill. Some 300 years elapsed before this fortress, like the first, was totally destroyed by fire. The next settlement, Troy III, was relatively insignificant; Troy IV was not much more progressive; but Troy V rose to a higher level, performing much and promising more.

Through all this time, over 1000 years, a continuous chain of culture links one settlement to the next. There may be progress or decline, but there is never interruption or sudden change; the citadel is occupied always by the same people, however often one group or family may have replaced another in control of the fortress. About 1900 B.C. this chain of culture was abruptly broken. Troy VI was founded by an alien people, who built a very much larger and more beautiful fortress, altogether different in design and much more elaborate in execution, destined to endure for about 600 years. The most interesting fact about these invaders is their cultural affinity to the peoples who at that same period were entering the mainland of Greece, first bringers of the Greek language; the two more or less contemporary bodies of invaders, Greeks and Trojans, are linked especially by the common use of an unparalleled technique in ceramics, the peculiar art of making Gray Minyan Ware, and by the introduction of the horse, unknown at Troy before the founding of the Sixth Settlement.

Troy VI was a fortress of great strength and elegance, the castle of a king, accommodating only the royal family and its retainers, a few hundred persons all told. There are positive signs in walls and mansions, in artifacts and imports, that the long life of this fortress was a tale of unbroken progress and increasing prosperity. Its principal foreign exchanges were with Minoan-Mycenaean Greece; textiles and the breeding of horses appear to have been its leading industries.

This proud and wealthy seat of kings, one of the strongest fortresses, and perhaps the most beautiful, in the world at that time, came to a sudden most disastrous end.

ANTIQUITY

Earthquake, very likely in a few seconds of time, reduced it to a smouldering heap of stones and brick and timber. The date of this catastrophe is probably not far from 1275 B.C.; and we shall now look with curious attention at its successor, to be called Troy VII *a*: for if any settlement on the site corresponds to the Homeric City of Priam, this must be the one. We want to know who lived there, and what sort of Troy they built upon the ruins; how long they lasted, and what happened to them in the end. It should at least be possible to answer the question, was there really a sack of Troy about the end of the 12th century B.C.?

* * *

What follows is a summary review of the final report of the Cincinnati Expedition's excavations at Troy, led by Carl Blegen, in the years 1932-8. This, the fourth volume of *Troy*, brings to an end one of the greatest archaeological achievements of our time. In technique and scholarship, in sobriety of judgment, in accuracy and clarity of presentation, the work of Blegen and his colleagues seems to me unsurpassable. *Troy* is much more than an excavation report: it is a monument of humane learning; and the editors have given special pleasure to the readers of their last volume by prefixing photographs of Dr and Mrs Semple, who founded, organized, partly financed and constantly participated in the Cincinnati Expedition from start to finish. We are deeply indebted to them; and they must be very proud of this magnificent record of the work which they inspired.

* * *

First, then, and very briefly: who were the inhabitants of Troy VII *a*? Dörpfeld's excavations in 1893-4 had already given a confident answer, now strongly confirmed by the Americans. There was no change of people: Troy VII *a* is simply Troy VI rebuilt after the earthquake; 'the continuity of culture, as compared with what had immediately preceded it, is in fact one of the most striking characteristics of Troy VII *a*'. The material remains are meagre enough, and undistinguished, important only because they prove that there was no sudden or even gradual break in culture; otherwise we notice nothing of much interest except a few *graffiti* on sherds, a rarity in the remains of Troy.

Let us now look again at the wreckage of Troy VI. For about 600 years the fortress had grown in strength and beauty and wealth; now in a few seconds of time it collapses, nothing standing intact, not even the circle of great walls and towers. These we can see distorted, partly collapsed, here and there actually split from head to foot; debris of brick and timber from their upper works lies deep about them. Within the walls the houses are in ruins, the streets are choked with rubble. If the shock was sudden, least immune from death or injury were the great men and their court, who alone lived in the fortress. The catastrophe seems immense: but surely the Trojans are great builders—will they not go to work and make their castle anew? Well over 1000 years earlier, Troy I had been totally destroyed by fire: then the people had levelled the surface and built a much larger and stronger fortress. So now, perhaps, the new Troy shall rise greater and grander from the ruins of the old.

We are very ill-prepared for what really happened. We do not expect it or understand it. The fortification walls are more or less restored, the main gates are cleared and repaved. Let us enter by the South Gate and see what work is doing. This had always been the principal entrance to Troy, a broad road passing through the monumental gate, direct and steeply uphill, cutting through the concentric terraces to whatever splendour crowned the summit of the hill. The rebuilders of Troy, we observe, have paved the passage through the gate with massive stone, and have included in its structure something quite

THE HISTORICAL SACK OF TROY

new—a rectangular stone drain, running underground, below the centre of the pavement. We pass on through the gate, proud of our new pavement, conscious of its hidden splendours, unaware that we have already seen almost all that is to see without disgust. For here at once, just inside the great walls, is something most pitiable, an abject uncomfortable Troy, degraded and altogether pitiable. A network of unworthy lodgings spreads to right and left and climbs inward over the foundations of the great houses of yesterday. Troy VI had included perhaps two dozen buildings, large, costly, free-standing, ambitious in design and elaborate in execution, standing on concentric circular terraces, divided from the fortification walls by a broad walk. Now, in a few spaces on the periphery alone, we count more houses than that. Here, at the South Gate, the broad walk is largely blocked by gloomy little bungalows, thin-walled, party-walled, one-roomed, barely furnished, backed on (but not bonded with) the fortification wall itself; an offence to the eye, and injury to the pride. Immediately on our right is a building not quite so base, still not comparable with the meanest of Troy VI. We enter an ante-room about 12 ft. long and tapering from 7 ft. to 6 ft. in width. In front of us, a door to a room eastward (now lost). Southward, to our right, another room, about 18 ft. long. This is furnished with a hearth, and with a saddle-quern sloping toward a clay basin, still containing wheat and (probably) vetch; nearby, two grinders—the grain is poured on to the quern, crushed with pestles, and runs down into the basin; then it is baked in two small fireplaces, still partly visible, full of soft ash and charred wood; finally the loaves are stored in a large bin of brick and timber in the south-west angle of the room, containing within itself another smaller bin. So here, immediately inside the main gate of Troy, is baking and storing of loaves: this south room is the bakery, the ante-room is the public saloon or shop. And with our loaves we may surely ask for wine; alongside the west wall lies an irregular shallow sink, paved and surrounded with slabs of stone, with a drain leading clear through the wall into the street outside; presumably to carry off leakage or spill from a jar of liquid standing here.

The times are changed, if there is blocking of broad walks and bargaining for loaves and liquor immediately inside the monumental gate, within the royal castle itself. And so far as the eye can see, there is now nothing but irregular hasty building of thin-walled sheepish cubicles, without love or pride. Only here and there we pick up fragments of better things, reminders that not all was wholly abject: a bleak stone idol, undeserving of much piety; a rectangle of ivory, inlay of something valuable; a scrap of white wall-plaster with design in blue paint; and there are still men bold and skilful enough to return from the deep forests of Ida with carcass of bear and leopard.

Now enter by the East Gate: the scene is not very different. The gate has been cleared and repaired, its eastern arm considerably prolonged. Inside, however, at once the cribs and cabins begin to sprawl and huddle. Here also the broad walk is blocked; and while the fortifications serve for an eastern wall, the north wall of one house is the south wall of its neighbour, so that to build a new house means to build only two walls, unbonded fore and aft. These semi-detached sheds, here particularly small and pitiable, thin-walled, earth-floored, extend to right and left of the gate: let us turn west, for at the end of an alley is something at last worth seeing. More or less behind Tower VI *h*, the line of lodgings is broken by a free space, a public plaza, well paved with large flagstones, ending to the north at a deep well (relic of Troy VI) whose rim is built up above ground-level with sections of huge storage-pots. However great the pressure for space and the demands of thrift, the Trojans—herein also like the Greeks—will not go without their *agora*, their meeting-place for debate, for exchange of news and opinions; and however drab their dwellings, this shall be found by posterity to be one of the most careful constructions in all that remains of Troy VII *a*.

ANTIQUITY

It is now apparent that there was a great and sudden increase in the intra-mural population after the earthquake. Where a few hundreds had lived, now a few thousands are to be seen, no longer aloof in splendour, but sullen in gloomy inhospitable cabins. Yet they were not conscious of external dangers, at least in the beginning: for they spill over on to the outside face of the fortification walls, in spite of the most elementary needs of defence. In the south angle of Wall and Tower VI *h* is the floor of a house, its hearth in actual contact with the wall; outside the north-east face of that tower is another house; and northward beyond it, a longer less simple building, source of an unexpected discovery—a stone-mould for casting jewellery, carved on both faces, with matrices for ring-shaped pendants; for three small spherical beads; for three slender segmented beads; and with circles compass-drawn for trinkets undefinable. In the south-west, finally, an angle of house-walls appears, perhaps continuing a ring of villas and shops surrounding the south and east faces of the fortification walls.

Such is the picture in outline. Now look inside the lodgings, and observe something unprecedented at Troy, significant of much. The ground is covered as thickly as possible with cribs and cabins, and the floors of these are covered, sometimes more thickly than convenient, with jars for storage. It had long been customary to keep stores at home in huge jars, *pithoi*, up to 6 ft. tall, even in the great houses of Troy VI, but Troy VII *a* differs, first, in the sudden great increase of storage; and secondly, in the saving of floor-space by sinking the jars underground up to their rims, then laying a stone over the mouth, so that you might still walk or sit though the floor was honeycombed with jars. Here, for example, in House VII^c, all but a quarter of the floor is jar-lids; and House VII^d looks not more comfortable. One jar contains wheat, another the complete skeletons of goat and kid. There is storage in great quantity of grain, meat, wine, oil. From a relatively small area 150 bulky pots emerge; surely a small proportion of the total in that area, that total a small proportion of all within the citadel.

The further search for material remains, except walls and floors and pottery, is disappointing. Our limitations are severe: the areas excavated for Troy VII are relatively small; the top of the citadel was shaved off in the Hellenistic and Roman periods, and we are left with an outer circle—or rather about half a circle—on the periphery. Moreover, this outer circle has been exposed to the ruinous disturbance of overbuilding and demolition, not only in ancient times; and soon we shall see another reason for not expecting much. The inventory, though relatively rich in tokens, both positive and negative, that the culture of Troy VI continued into VII *a*, is in fact very short and without glory. Of metal, only 7 articles; of bronze, an arrowhead, a ring, 2 knives, a pin; of lead, a rivet and a whorl; even of stone, only 36 items—beads, blades, pestles, whorls, whetstones; even of horn and bone, only 29—mostly awls and pins; of ivory, 2—a fragment of inlay and a pin; 8 beads of paste; of terra-cotta, many spindle-whorls, the article most characteristic of Troy VI throughout its history. The rest is all pottery, and its adds a new paragraph to our history.

Gray Minyan and Tan Wares are 'direct inheritances, with little or no changes, from Phase VI *h*'. but in one other respect there is a sudden and significant breach of custom. For the past two or three hundred years Troy VI had imported Mycenaean pottery (and much else) from the islands and mainland of Greece: the Americans counted up to 800 Mycenaean vases, and sherds innumerable; we must add whatever Schliemann and Dörpfeld may have found. From the last phase alone of Troy VI, 1000 Mycenaean sherds emerged. But the whole lifetime of Troy VII *a* has no more to offer than 60 imported Mycenaean sherds, 8 of Cypriot. On the other hand the count of imitations, local versions of the Mycenaean styles, rises steeply in proportion. It is obvious that trade between

THE HISTORICAL SACK OF TROY

Greeks and Trojans declined greatly, perhaps it was even suspended, during the short lifetime of Troy VII *a*; and this we may add, if we like, to our list of significant facts. We have seen the sudden great increase of population within the fortress; the hasty thrifty building of very numerous cubicles; the floors honeycombed with storage of foods and liquids. We see now the link of commerce, which had bound Trojans to Greeks for many generations, abruptly broken. We shall no longer postpone the question, what happened to Troy VII *a* in the end; what was the manner of its passing?

To this most important question the American excavators return a clear and certain answer: Troy VII *a* was 'ruthlessly laid waste by the hand of man, who completed his work of destruction by fire'. Go back through the South Gate, look again at the main street and western alley, observe the floors of the bakehouse. The street and alley are blocked by great masses of stone and rubble, to a depth of 4 or 5 ft. Outside the bakehouse-door is wreckage of stones in hundreds, brittle through heat, mixed with clay reddened and hard-baked, interstices choked with ash and carbonized matter. Let this example serve for all: every house or hut in Troy VII *a* which could still be examined told the same story—a story of utmost violence of destruction, legible in debris of burnt brick, charred wood, ashes and brittle stones. The question whether the burning was accidental or deliberate is now at last confidently answerable. The destruction was too systematic, the damage too wanton and disorderly, to be the effect of mere accident. Nothing but deliberate demolition could have choked those streets with chaos of shattered masonry from houses on either side; could have created over every alley and every floor what Blegen calls that 'general effect of utter desolation'.

Consider further that skeletons of adult humans have very seldom been found in any of the strata of Troy within its walls; only here, crushed among the ruins of Troy VII *a*, they are relatively numerous. In the doorway of the bakehouse, fragments of a human skull; in the street outside, more fragments; in the western alley, a lower jawbone (four teeth in place); and not far away, an arrowhead of familiar Mycenaean type. Outside the fortification walls, in House 741, a human mandible, broken, buried in debris of disintegrated brick, red or blackened by fire. And on the western slope of the great walls, a whole human skeleton, lying on its back, skull crushed, jaw broken; not at all in the posture of a body buried, but rather of one left where he lay at the foot of the walls of Troy, killed from above in the assault. The Trojans at no time left the dead lying about; these are presumably few out of many, overlooked because hidden by stones and rubble while the rest were carried out for burial or cremation. We shall not, however, depend too much on these witnesses; the extent and nature of the ruins had already satisfied us that we have seen in the passing of Troy VII *a* 'the fate of an ancient town captured and sacked by implacable foes'; and the flight of fancy seems short enough if we imagine a connexion between the ultimate sack and the previous tokens of a siege—the huddling of thousands within the walls, the honeycombing of floors with storage-pots. In brief, the Sack of Troy is an historical fact, the Siege a probability. It remains to ask who sacked it, and when.

The first of these questions leads into other and wide fields; I do not now enter them. The excavations have nothing useful to offer. Arrowheads of Mycenaean type might be found in Troy, though never a Mycenaean fought there; and Troy might lose her trade with Greece, though Greeks be not among her enemies. To identify the sackers of Troy with Mycenaean Greeks, we need the help of Hittite documents and Homeric catalogues. I return to the second question: what is the date of the historical Sack of Troy?

In general, the strata are shallow, and there are few traces of rebuilding within Troy VII *a*. It is therefore unlikely that its gloomy lodgings served more than one or perhaps

ANTIQUITY

two generations of men. There will be no means of defining its duration more precisely unless absolute dates can be found for developments in the styles of Mycenaean pottery. It is certain that Troy VII *a* was founded when the classes of pottery called Mycenaean III A were giving place to Mycenaean III B, and that it was destroyed before III B had begun to be superseded by III C. The earlier class, III A, is scanty among the relics; III B completes the inventory—not a single sherd can securely be attributed to III C. What this means in terms of absolute dates nobody can say for certain. Blegen suggests, with all caution, that the years 1275–1240 B.C. may cover the whole duration of Troy VII *a*; but he makes allowance for ‘shifts of a decade or two’ in dates founded on sequence of Mycenaean pottery-styles. Other experts in this field would allow rather more shift, and would be willing to postpone the decline of class III B—and therefore the date of the Sack of Troy—down to somewhere near 1200 B.C.

It is not very likely that we shall soon, if ever, be much better informed. Let us in the meantime state so much as is certain already—that ‘Troy VII *a* has yielded actual evidence showing that the town was subjected to siege, capture and destruction by hostile forces at some time in the general period assigned by Greek tradition to the Trojan War, and that it may safely be identified with the Troy of Priam and Homer’. Those are the words of Carl Blegen, pleasing to most of us, still painful to a few. Nobody who has followed the detail of his work will think that he has overstated the case.

* * *

From the siege and sack onwards to the present day, universal history is indifferent to the progress or decline of Troy. If we are nevertheless curious to inquire what happened next, the ruins tell a plain story, however brief.

The deposits of the next phase, Troy VII *b*, lie almost everywhere in two strata; and the most important fact to be recorded is that this difference of strata marks—for the first time in 700 years or more—a change of culture. For an appreciable time—to be called the period VII *b* 1—the citadel was reoccupied by the survivors of the sack of Troy. Continuity of culture is manifest, especially in their pottery, but also in their building; stumps of the houses of Troy VII *a* serve as foundations or supports; technique is much the same; ground-plans are as a rule unchanged. The South Gate was cleared, or rather a cobbled way was laid over the debris on the pavement; the underground drain was neither renewed nor replaced. The East Gate was abandoned to decay, all blocked with stone and brick and ashes. The cobweb of cribs and cabins was re-spun. These men, inglorious and downcast, the last of a nation which founded Troy VI over 700 years earlier, have perhaps one more generation to live in control of their ancestral home. The second phase of Troy VII *b*, to be called VII *b* 2, shows a different people dominant; a cruder alien people, whose characteristic pottery—hand-made, studded with bulky knobs—seems to have left a trail, however obscure, through Thrace to Bulgaria, perhaps to Hungary. It has no antecedents at Troy itself.

In VII *b* 2 the fortress was rebuilt as a small town, with irregular blocks of houses divided by narrow crooked alleys. The houses largely ignore the ground-plans of VII *a* and VII *b* 1; moreover they are larger, with more rooms, more interconnecting doors, not without window-like openings; altogether more complex and elaborate, though still a mere cobweb, a network of lowly lodgings. As in Troy VII *a*, so in both phases of VII *b* the search for material remains, except walls and floors and pottery, is ill-rewarded. A fragment of gold leaf, and another of cut ivory, from House 768, and an ivory comb from Street 751, all of Phase VII *b* 2, are the sole witnesses to refinement of art or aspiration to elegance. Religion is debased in the shape of an obscene abominable idol, most hideous

THE HISTORICAL SACK OF TROY

of unlovable female figures, among the ugliest relics of antiquity. It is certain that some of the former Trojans lived still on the site, now dominated by these uncouth foreigners; but their manufactures will soon be crowded off the market; their days—and those of their masters too—are numbered.

In brief, the primary lesson to be learnt is this: that after the sack of Troy the survivors lived on ingloriously for some thirty to fifty years; that they were then subdued, but not exterminated, by a people of different culture, apparently from the Balkans. How long this people lived on the site of Troy, we can only guess. 'At least two or three generations', we may believe; and almost certainly not much longer than that, for the site is barren of deposits which might be referred to the period c. 1100–700 B.C. Not one sherd of Proto-Geometric pottery is known to have been found at Troy—not by Schliemann, or by Dörpfeld, or by Blegen himself. We are now in effect asking what happened at Troy during the Dark Ages of Greece, from the 11th to the 8th century B.C.: and this is the answer which we must accept—that there is nothing at Troy to fill this huge lacuna. For 2000 years men had left traces of their living there; some chapters in the story were brief and obscure, but there was never yet a chapter left wholly blank. Now at last there is silence, profound and prolonged for 400 years; we are asked, surely not in vain, to believe that Troy lay 'virtually unoccupied' for this long period of time.

* * *

And so the tale of ancient Troy comes to an end. We have not much interest in what follows. About 700 B.C. the site was occupied by a colony of Aeolian Greeks, unknown to fame in the 6th century, stagnating in the 5th and 4th. The future then is all Ministry of Works and Restorations, first in the Hellenistic and then in the Roman era. We glance at them coldly enough. We have seen the City of Priam in its splendour, and reckoned it among the great monuments of the Mediterranean world. We have seen it shattered by earthquake; we have seen it fallen and sacked and burnt. We have read the tale of Troy from its beginning: and we have followed it fading to its end, a ghost-town in the gloom of the Dark Ages of the ancient world.

The Nuraghi of Sardinia

by GIOVANNI LILLIU

Dr Giovanni Lilliu, Professor of Archaeology in the University of Cagliari in Sardinia, has recently published the results of excavations in the remarkable nuragic site of Barumini (see Plate VIII, and Book Chronicle, p. 43). In this article he summarizes our current knowledge, much of it due to his researches, of the Sardinian nuragic civilization.

ONE of the most characteristic features of Sardinian architecture, playing an important part in the scenery of the island, is provided by the ancient, forbidding and imposing megalithic structures which the local inhabitants, in the original prehistoric and pre-Indo-European tongue, call *nurakes*, *nuraghes*, *nuraxis*, *nuraccis*, *nuragis*, *nuracus*, etc., according to district and dialect. We generally know them by the Italian form of the word, *nuraghi* (singular *nuraghe*).

Built of large blocks set without mortar in more or less regular horizontal rows, the *nuraghe*, in its simplest form, appears as a round tower with battered sides. Its height depends upon the number, from one to three, of the storeys it contains, and may sometimes, as at the *nuraghe Santu Antine* at Torralba in the province of Sassari, reach as much as 20 m., with walls from 2 to 5 m. thick (PLATE VIII).

The chambers are roofed by corbelled vaults, ogival in section, of the type known by the ancient Greeks as *tholoi*, which by reason of their similarity in shape to beehives they compared gracefully with the golden hives constructed by Daedalus for the goddess Melissa. The room on the ground floor, circular in plan, is entered through a passage which increases in height and width as it approaches the chamber, in order to take the fullest advantage of the ray of light entering by the external doorway, generally low and narrow for defensive purposes. The archaic form of the passageway has a gabled roof, while in later examples it is covered with horizontal slabs, giving it a rectangular or trapezoidal section.

The room, at first without subsidiary chambers, becomes more elaborate in course of time by the addition of up to three large symmetrically-placed niches intended for storage or beds. In the same chamber is sometimes found at floor level the entrance to a spiral staircase which climbs within the thickness of the wall to similar chambers on upper floors, or a flat terrace roof. In the cases where the staircase opens above the ground, a ladder of wood or rope must have been used, which one could pull up in case of danger, should an enemy succeed in forcing an entrance into the ground floor chamber for example.

This curious trick of construction, characteristic of the *nuraghi* and planned as a means of military protection for successive retreats, appears only in *nuraghi* of archaic type. In more advanced ones, the staircase climbs directly from the floor of the entrance passage, usually on the left as one goes in, opposite a niche for a sentry, who would thus be in a good position to attack the right flank, unprotected by the shield, of an assailant. The first type gives an interrupted approach, leading only from chamber to chamber as one climbs the tower; in the second, however, the spiral runs the full height, with a doorway opening at the level of each chamber. The interrupted stair is the earlier form, denoting

THE NURAGHI OF SARDINIA

less experience in construction, in that the corridor and stair are separated by solid masonry, in order not to endanger the stability of the building. The greater spaciousness, convenience of circulation and boldness of construction shown by the stair in the passage reveal a technical advance and a more recent date.

At the top of the nuraghe, even in its original simplest form, must have been a flat roof, for purposes of lookout and defence, surrounded by a parapet, though this may have been of wood. But at the start it is unlikely to have had a terrace on large projecting corbels overhanging the external wall-line. This unusual feature, present in certain nuraghi (Su Nuraxi at Barumini, Cagliari province, Cummossariu at Furti, also Cagliari, and Nuracale at Scannu Montiferru, Nuoro), developed later, and served for the dropping of missiles, large stones, on attackers. Without the projection of the terrace, these would have fallen harmlessly on the sloping walls below, due to the trunco-conic shape of the tower. As far as I know, this is chronologically the first appearance of machicolation anywhere in the military architecture of the Mediterranean, hence its great importance.

* * *

The name *nuraghe* was held in the last century to be of Phoenician origin, meaning 'house of fire', 'habitation' in other words. But now it is better referred to the indigenous substratum and compared with the word *nura* (*nurra*), which, coming from the pre-Indo-European tongue, is diffused through the same regions of the Mediterranean as the Megalithic monuments (the Balearics, Spain, North Africa, etc.). In the interior of Sardinia, Barbagie, it has the double sense of 'heap' and 'cavity'. Perhaps *nur-aghe* means 'hollow pile', i.e. 'hollow construction', 'hollow tower'. In effect the structure consists of superimposed, piled up elements in irregular rows which, particularly in the earlier polygonal or cyclopean examples, strongly recall the rocky hillocks or cairns of waste stones of the Sardinian countryside.

By the 4th century B.C. the Greeks were already acquainted with the term *nuraghe*, and wondered at the formal perfection of their corbelled vaults, according to the aesthetic canons of harmony and proportion of the time, although there is really no 'classicality' even in the better-built nuraghi. They believed them to have been built by the Cretan Daedalus, attributing to him the perfection of their construction for reasons of national prestige, supporting this attribution with the legend of the hero *Norax* (Norake, i.e. 'the nuraghe'), eponymous founder of the ancient city of Nora, related phonetically with *nuraghe*. The Romans referred to the nuraghe as *castra*, 'castles' (Livy, xli, 12), still appearing in some present-day place names, or as caves or underground structures, *oikéseis katágeoi*, which should be confined to certain decadent buildings of the mountain zone (Barbagie, Gallura, Marghine, Montiferru, etc.) of aberrant form with lair-like chambers—the so-called gallery or hideout nuraghi.

* * *

Some 6,500 nuraghi survive to the present day, with an overall average density of 0.27 per sq. km., rising in some districts to 0.9. Their distribution over the entire island, especially in the west central region, and their staggering number, give patent and concrete testimony of both a large though scattered population and of the organization of human effort throughout the historical development of the island. This still applies if the work was done, as is likely, by slave labour, commonly employed in antiquity. The distribution and density of the nuraghi, depending primarily upon the physical geography of the country, such as its topography, geological formation and altitude, is closely linked with hydrological and climatic considerations. Situated by water (rivers, springs, etc.), they

ANTIQUITY

generally face the sun and are set in positions sheltered from the prevailing wind, the mistral. Over two-thirds have their entrance towards the S.S.E., less than one-third to the S.W., and very few face the N. and N.W.

These geographical conditions and also more obviously their preference for high and dominating situations, their frequent strategic connection and intervisibility, the presence within them of wells for use in cases of emergency, their relation to points of particular strategic importance and of special economic value, or the presence of settlements to protect, indicate what was, at least for the greater part of their history, the main purpose of these massive constructions. One is dealing in fact with permanent military structures in which dwelt the chieftains and garrisons at times amounting, as at the nuraghe at Barumini, to 200-300 men; a kind of medieval castle which dominated and protected the adjacent settlement whose inhabitants, in time of trouble, could find refuge within the walls of the fortress. Barumini shows a convincing example of this (PLATE VIII). The nuraghi are therefore not the tombs of princes and their families as was erroneously believed on the evidence of the discovery of human remains. These are in later, post-nuragic, levels of Carthaginian or Roman date. Nor were they monumental temples either, different forms of which are known today of both prehistoric and protohistoric date. The tombs are known likewise, *domus de janas* or 'fairy houses' and *tumbas de sos gigantes*, 'giants' tombs', the first rock-cut, the second built of megaliths above ground. Sometimes the nuraghi may have been simple habitations of rich herdsmen or peasants, especially when they are simple and of modest size; but even in this case the stout structure and tower form still give the building a military appearance. For the rest, the usual fortress character is proved in numerous examples where the form is more complex and advanced by the specific technical details (trap-doors, embrasures, machicolations, acoustic passages, wall strengthenings, blind angles, etc.) to which can be added the recovery of arms and other objects with military associations. The nuraghi are, therefore, monuments of civil and secular life, intended for living men.

* * *

In the main, the nuraghi were built with the object not so much of protecting from Ligurian piracy a politically unified Sardinia (which the Sardinians never succeeded in achieving) within a sort of Mediterranean coastal defence scheme, as for the defence of single small local groups (tribes or *civitates* as the Romans called them) governed by petty kings, based on a pastoral or agricultural economy according to district. Somewhat distantly, the politico-strategic organization of Sardinia at the time of the medieval 'Judges', who were engaged in constant conflict among themselves for hegemony and territorial expansion, recalls the same state of affairs. Only at a later stage, at the time of the Semitic colonization, by Phoenicians and Carthaginians, was the old system of internal, local defence adapted for use against the invaders, though it was still not combined into a single unit and was confined to zones of particular political, military or economic importance. In some nuraghi, true mountain strongholds, hidden in the woods, tucked into the rock formations and resembling animal lairs inside, one can recognize the 'caves' recorded by Greek and Roman writers when referring to the guerrilla war between the Sardinians and Romans who, to dislodge the natives, had recourse to police dogs sent over from Rome. They are the last significant testimony of the Sardinian resistance, a resistance more ideological than anything else, in defence of a liberty which the oracle had foretold would be lasting but which in practice had become a bitter and barren anarchy.

To sum up, the nuraghi give objective documentation of a pastoral and agricultural society of rural character, never reaching the urban level, organized purely for defence,

THE NURAGHI OF SARDINIA

and that in a passive and negative form. This trait remained characteristic throughout the development of Sardinian political history. The Sardinians, in fact, always resisted, but nearly every time were enslaved notwithstanding.

* * *

One can follow in the nuraghi the variation and gradual progress of invention in which the individual artistic ability of unknown masters played its part in the interests of the rigidly organized and subjected communities. In the course of time the original basic idea of the isolated circular tower was elaborated in both plan and elevation, assuming diverse forms which spread sometimes more, sometimes less, widely from district to district of the island within short spaces of time.

For example there are binate forms, i.e. with two towers linked or connected by an intermediate courtyard (nuraghe Carcina at Orroli, Nuoro, and Domu s'Orku at Sarrok, Cagliari), and various polylobate ones—a massive triangular work around an original principal tower, containing courtyards, corridors and cells (Santu Antine at Torralba, Sassari); a quadrangular bastion with towers at the corners surrounding a higher, earlier keep (Su Nuraxi at Barumini) with an internal tower later surrounded by a rampart either pentagonal (nuraghe Orrubiu, Orroli, Nuoro) or hexagonal (San Sebastiano, Gesico, Cagliari) with peripheral turrets. These more complex blocks are enclosed in great outer defences with numerous towers linked by curtain walls with loopholes, gates, posterns and blind angles, acting as outworks according to the principles of defence employed in ancient warfare, based on concentric terraces. Particularly notable are the vast defensive enclosures of the nuraghi Perdosu at Guamaggoire, S'Uraki at San Vero Milis, and the above-mentioned ones of Orrubiu and Barumini, which last has a claw-like shape due to a redoubt thrown forward beyond the walls.

* * *

The simple, isolated nuraghi and the compound, binate and polylobate ones show equally a development in plan, structure, relation between the component parts and use of space.

Archaic nuraghi are distinguished by: the marked slope of the tower's outer walls, a very high gabled roof to the entrance passage, a narrow eccentric chamber with or without one or two subsidiary niches and a staircase opening above the level of the chamber floor. The chamber's proportion of breadth to height is very low. The ratio in Domu s'Orku near the coast at Sarrok is 1 : 2.18.

More advanced nuragic towers show the following characteristics—less slope in the external walls, sentry box and stairway entrance at floor level, centrally placed chamber with three lesser chambers opening from the main one in cross form, and ratios of space to wall thickness and internal diameter to height approaching unity. An example of this is Santu Antine, the most perfect, almost classic, Sardinian nuraghe, with an index of 1 : 1.43. Its exactly central chamber, its equal figures for diameter of chamber and thickness of wall, the bolder use of space, with its symmetrically placed niches, the freedom of circulation allowed in plan and elevation by making full use of the thickness of the walls, show in this nuraghe the highest possible development of the vaulted nuragic chamber.

By way of towers marked by outer walls ever closer to the vertical, by the decadence and alteration of the curved profiles of the chambers and the flattening of the corbelling (index of 1 : 1.08 at the nuraghe Santa Barbara, Villanova-Truscheddu, Cagliari), one comes finally to the form of the hideout nuraghe, *nuraghe-nascondiglio* (Badas, Tempio,

ANTIQUITY

Sassari; Sa Ittiri and Siligogu, Silanus; Tusari, Bortigali, Nuoro, etc.). The circular outline gives way to oval and subrectangular plans, and the round, vaulted chambers of the best period turn into long, narrow, crooked passages with horizontal slab roofs, resulting from a barbarized and regionally divergent architectural style which demonstrates a civilization economically and socially bankrupt and an indigenous population culturally impoverished and near their final overthrow.

* * *

This typological sequence implies a corresponding chronological one, which, owing to the isolated and conservative nature of the nuragic civilization, was spread over a long time.

The earliest simple nuraghi go back to around the middle of the 2nd millennium B.C. This is proved by the discovery of copper ingots with metric signs from the Aegean alphabet near the nuraghi of Serra Illixi, Nuragus, Nuoro, and Sant'Antioco at Bisarcio, Ozieri, Sassari. Although the tendency now is to lower the date of the copper ingots from Cyprus and Mycenae, there is no reason to think the Sardinian pieces later than the end of the 15th century, a time when the Aegean trade, with the political and cultural expansion of the Achaean empire, turned towards the western seas on the track of earlier ventures. In the first half of the same century, paintings of ingots appear in the tomb of Rehmire (1470–1445 B.C.) in Egypt. We are here in the western Middle Bronze Age.

The building of simple nuraghi continued into the Late Bronze Age (1200–1000 B.C.). A wooden beam used in the walls of the ground floor chamber in the central, primitive tower of Su Nuraxi, Barumini, gave on testing a Carbon-14 date of 1270 ± 200 B.C. for its date of felling, i.e. death. That is to say, the principal tower of Barumini goes back to a period between 1470 and 1070—I incline towards the latter. This allows us to see the unfolding of the nuragic civilization in relation to the wider actions and events of the peoples of the Mediterranean shores towards the end of the 2nd millennium B.C., which led to displacements and alterations of peoples and cultural currents from the Orient to the west.

But it is during the Early Iron Age (1000–500 B.C.) that one finds the greatest flourishing of nuragic architecture, and it is in this period that to the early isolated towers are added the ramparts and outworks which transform them into strongly fortified castles of complex and formidable layout. The increase of internal and external dangers due to the first Semitic colonization of the coasts and to the crystallization of the politically and socially independent local groups combined to produce these new superior forms of military architecture (wall strengthenings, machicolations, redoubts, etc.). The civilization of the Sardinian shepherd-warriors had to pay heavily for the political freedom they were in danger of losing. War for them now became a religion, a rite of strict observance.

It is above all the nuraghe of Barumini (PLATES VII c and VIII), with its succession of building periods, which offers us an instructive outline of the gradual strengthening and perfecting of the nuragic citadels which took place in this period in which a people expended all its resources that it might live, or at least die with honour. In the 9th century to the keep of Su Nuraxi was added a square extension with machicolated towers at the corners, enclosing a high courtyard (PLATE VII c). In the second half of the 8th or beginning of the 7th, the square work, perhaps as a defence against Carthaginian battering rams, was covered with a strong sheath of wall which closed the machicolations of the outer towers and the entrance at the base of the bastion. Accordingly a new entry was cut in the walls 7 m. above the ground and a projecting terrace on gigantic corbels was constructed above the glacis all round for the new machicolations. In the 6th century, after a siege by the Car-

THE NURAGHI OF SARDINIA

thaginian army, the fortress of Barumini was overthrown, the nuragic garrison overcome and destroyed and the population of the burnt-out village put to flight. Later the refugees returned, reoccupied the village and squatted in the ruins of the dismantled fortress down to the 2nd and 1st centuries B.C., retaining the habits and customs which had come down to them from the civilization of better days, free and not without glory.

The last nuraghi were built in the Later Iron Age between 600 and the second quarter of the 3rd century B.C., in the full historic period. These were the hideout nuraghi of the mountain fastnesses mentioned above. They are the 'caves' recorded by classical writers, which mark the withdrawal of the natives from the plains and hills into the central mountains, and served to hide the last nuragic guerrillas from the Roman police in the years following the conquest of the island in 231 B.C.

* * *

Greek historians (particularly the reliable Timaeus), in their few references to the architecture of early Sardinia, saw the connection with the richness of the island's soil, and emphasized the spectacular aspect of the ancient buildings. Recognizing forms 'made in the old Hellenic manner' (Ps.-Ar. *de mir. ausc.*, 100), these writers were the first to assert for it a direct descent from an Aegean, Mycenaean or proto-Greek source. It will be remembered that the recent decipherment of the Minoan linear script allows us to see in the Achaeo-Mycenaean culture an early form of Greek civilization. And amongst its many manifestations, it was the *tholoi* (the nuraghi that is), that these writers attributed to such as the hero Aristeus (Sall. (Kritz), fr. 7; Paus., x, 17, 3), Iolaus (Diod., iv, 29), or Daedalus. The first two suggest a politico-social context in the first half of the 1st millennium, basically a monarchical regime of the Cretan type surviving from the millennium before, albeit with democratic aspirations, and reveal traces of Aegean culture in the island. These are suggested also by the record of Iolaus's tomb which became a temple, like the temple-tomb at Knossos and that of Wanax Minos at Camico in Sicily (Diod., iv, 79, 3-4). In Daedalus, a fugitive from Camico to Sardinia, to whom they attributed the so-called *dedaléi* edifices, i.e. the nuraghe again, one sums up the 'genius' and the architectural aspect of the proto-Sardic civilization. Here is a further element of the Cretan legend, carrying from Sicily on to Sardinia, according to a geographical and chronological sequence, the movement of Aegean peoples on the sea-routes leading to the west. In fact, from the literary traditions one can see that there exists a Creto-Mycenaean element, however attenuated, altered and retarded, in nuragic Sardinia.

This element shows itself in both the basic form and in technical details of the nuraghi. The rhythm of the fine vault of the nuraghe Is Paras at Isili (PLATE VII *b*) takes its place in the fundamental scheme of the false domes of the Mediterranean and the Near East, with very early examples of the 4th and 3rd millennia in Crete, Cyprus and Iraq. Even more closely does it echo the magnificent and splendid Achaean *tholoi* of the Peloponnese of the second half of the 2nd millennium B.C. The relieving triangles on the architraves of the entrance passage and side chambers of Santu Antine recall the corresponding one over the architrave of the lateral cell of the Treasury of Atreus. In structure, section, and play of light and shade, the outer corridors of the same Santu Antine (PLATE VII *d*) re-echo equally the eastern and southern galleries of the citadel of Tiryns, though widely separated in time. Pseudo-galleries with winding stairs (Tres Nuraxis B, Siddi, Cagliari), covered approaches (Santa Vittoria di Serri, Nuoro) find parallels in defensive devices at Tiryns and Mycenae, and those citadels, dominating from behind their high walls, show similarities to the later fortified complexes on their high precipitous crags in the mountainous zone of the island (Serbissi and Urceni, Osini, in the Ogliastro district of Nuoro).

ANTIQUITY

The Creto-Mycenean tradition shows itself in other early Sardinian details of construction. The *megaron*-form occurs in the Megalithic mountain temple of Domu de Orgia at Esterzili, Nuoro. In the later phase of the village around the nuraghe of Barumini (5th to 4th century B.C.) there still survives the type of Cretan dwelling, the prototype of the *anaktoron*, round in plan with rooms radiating from a central courtyard, which can be seen at Chamaezi Siteia (first half of the 2nd millennium).

In fact, other elements of material and spiritual life (bronze weapons, pottery, stylistic formulae in bronze modelling, ideologico-religious motifs) are present which reflect various regions and periods of the long and fruitful development of Aegean civilization in Crete, Cyprus, Mainland Greece, etc. It has been said that the flight of Daedalus to Sardinia represents the last search for safety of the Cretan civilization in the west (Laviosa Zambotti). Leaving aside the fact that the same claim could be made for the neighbouring Balearic Islands, especially Minorca, the theory seems to be pressed too far. But there is a basis of truth in it, if one thinks not of the entire civilization but of certain of its elements which withdrew from the Aegean to a marginal retreat in Sardinia, where their isolation in space and time led to cultural divergence and decadence.

* * *

For the rest, one cannot say that the Sardinian civilization in its nuraghi abandoned the basic imported form of the *tholos* in favour of elaborations. If they and their details of shape are not all of local invention, nevertheless the interpretation of the themes is, as are also, above all, the variations, adaptations and enrichments. The main adaptation lay in the transformation of the subterranean Creto-Mycenean, and generally oriental, *tholos* into the corbelled chamber contained in a terraced tower above ground. The most considerable enrichment was given by the invention of the internal staircase at floor level, a happy formula at once comparatively well-placed for defence and rather daring in construction, since for the first time, at various levels, the masonry came to be hollowed out in the search for space. These adaptations and enrichments were invented and applied by the proto-Sardic people, a concrete and useful contribution which revealed from the very beginning the nature and quality of individual genius in the architectonic nuragic civilization.

This, then, in the course of time, was carried by its powerful and vigorous elaborations ever further from its original models, but always in harmony with the harsh, severe and forbidding structure of its shepherd-warrior society. The inherent propensity to large-scale building was ripened into the complex and colossal both by natural development with the passage of time, and by the pressure of foreign invasion, which gave it a motive and reason. The nuraghi were erected to last, and to give—as in fact they still do—one of the most fundamental and coherent testimonies of any ancient Mediterranean people.

REFERENCES

A. LAMARMORA, *Voyage en Sardaigne*, II, Paris-Turin 1840; G. SPANO, *Memoria sopra i nuraghi di Sardegna*, Cagliari 1854 (1867); E. PAIS, *La Sardegna prima del dominio romano*, Rome 1881; G. PINZA, *Mon. Ant. Lincei*, 1901; E. PAIS, *Arch. Storico Sardo*, 1910, p. 85; A. TARAMELLI, *Mon. Ant. Lincei*, 1907, col. 6, 1909, col. 225, 1910, col. 201, 1919, col. 406, 1939, col. 10, *Not. Scavi*, 1915, 1916; *Convegno archeologico in Sardegna*, 1926; B. R. MOTZO, *Convegno cit.*; G. PATRONI, *La preistoria*, II, 1937; LILLIU, *Not. Scavi*, 1941; P. MINGAZZINI, *Studi Sardi*, VII, 1947; M. PALLOTTINO, *La Sardegna nuragica*, Rome 1950; E. CONTU, *Studi Sardi*, X-XI, 1952; C. ZERVOS, *La Civilisation de la Sardaigne du début de l'énéolithique à la fin de la période nuragique*, Paris 1954; G. LILLIU, 'Il nuraghe di Barumini e la stratigrafia nuragica', *Studi Sardi*, XII-XIII, I, 1955; LILLIU, 'I nuraghi della Sardegna', *Realta Nuova*, 9, 1956 (Rivista dei Rotary Club d'Italia); LILLIU, *Illustrated London News*, 8 March, 1958.

Over-Taxation and the Decline of the Roman Empire

by A. H. M. JONES

The Professor of Ancient History in the University of Cambridge discusses the reasons for the abandonment of marginal land in the Roman Empire, and suggests that over-taxation played an important part in reducing the man-power of the empire and contributed to the empire's impoverishment and military collapse.

RARELY in recorded history has there been a louder and more persistent chorus of complaint against the taxes than under the later Roman Empire. Already under Diocletian (284–305) Lactantius declares that the burden was intolerable, and under Justinian (527–565) Procopius raises the same lament. Nor was it only the taxpayers who complained. Valentinian III in 444–5 publicly admitted that ‘if we claim these expenses from the landowner in addition to what he pays already, such an exaction will crush his last feeble strength: if again we demand them from the merchants, they will inevitably sink under the weight of such a burden.’

It would be naïve to accept without question the complaints of taxpayers, or even the apologies of a government which is introducing a new form of taxation—Valentinian III was imposing a purchase tax. Taxpayers have rarely been ready to admit that the claims of the government are moderate and reasonable. The volume of their complaints, moreover, is usually governed not so much by the relation of the sum demanded to their capacity to pay, as by its relation to what they are accustomed to pay; our great-grandfathers protested as loudly against an income tax of threepence in the pound as we do against one of nine shillings. Now the rate of taxation undoubtedly rose fairly steadily under the later Roman Empire. Themistius in 364 declared that it had approximately doubled in the past forty years. This continual rise in taxation accounts for the persistence of the complaints, but it does not prove that they were justified. Indeed, one may wonder whether the taxpayer under Diocletian can have been as hard hit as Lactantius represents, when his grandson could pay twice as much and survive. To Aurelius Victor, writing in 360, Diocletian's taxation was ‘*modestia tolerabilis*’ compared with the ‘*perniciēs*’ of his own day, and Procopius might have found the ‘*ruinous*’ rates of Constantius II very reasonable under Justinian.

The economy of the empire was primarily agricultural; the vast majority of its inhabitants were peasants, and the national income was mostly derived from the land. Its main tax, which seems to have produced over 90 per cent. of the revenue, was likewise imposed on agriculture. It was a combined land and poll tax, being assessed partly on agricultural land (*iugatio*) and partly on the rural population (*capitatio*). There are unfortunately very few figures for the rate of taxation, and it is even more difficult to estimate the relation of the tax to the yield of the land. Such information as we have dates from the 6th century. We possess a complete tax register for the Egyptian city of Antaeopolis in the reign of Justinian. The area involved was 51,655 *arurae* (roughly equivalent to 35,000 acres), nearly all arable, and the rate, including all supplementary charges, works out at about 3.2 *artabae* of wheat or $7\frac{2}{3}$ carats gold *per arura*. The average rent of good arable

land in Egypt was 5 *artabae* or 12 carats *per arura*, and the rent usually represented 50 per cent. of the gross yield of the land. The tax therefore comes to nearly one-third of the gross yield. A second document, also of Justinian's reign, comes from Ravenna. Here the rents of a group of estates confiscated from the Arian church and granted to the Catholic church of the city are stated to total 2,171½ *solidi*, and the taxes payable on them amount to 1,239 *solidi*. Church lands were exempt from a number of supplementary charges, but the tax nevertheless comes to 57 per cent. of the rental value, and presumably therefore, if rents were calculated on the same basis in Italy as in Egypt, to over a quarter of the gross yield of the land.

These are the rates which taxation had reached by the 6th century. They are startling figures when compared with the *decumae* which the Roman Republic had levied in many of the provinces. Even the privileged categories of landowners paid more than twice as much in the 6th century A.D. as the provincials had in the 1st century B.C., and the ordinary landowner well over three times as much. Moreover, the tax under the later Roman Empire did not vary with the actual annual yield of the land, as had the *decumae*, but had to be paid in bad years as in good, unless a special rebate was granted.

It may be asked if this high rate of taxation had any adverse effects on the economy of the empire. There are two ills which may be, in part at any rate, attributed to it, the progressive abandonment of the land and the resultant shrinkage of the cultivated area and of the yield of agriculture, and the depopulation of the countryside, and, therefore, since the vast bulk of its inhabitants lived on the land, of the empire as a whole.

Complaints of abandoned land (*agri deserti*) are as common as those of over-taxation and extend over as long a period. A large volume of legislation, preserved in the Theodosian and Justinian Codes, shows that they remained a perennial problem from the time of Diocletian (and even earlier yet) to that of Justinian. The government was mainly interested in the fiscal aspect of the question; it required the tax assessed on the land to be paid whether it was cultivated or not. Where possible it sold or granted abandoned lands to new owners who, encouraged by initial rebates of taxation, would bring it under cultivation again. But if this failed, it either assigned them compulsorily to owners of good land, whom it made responsible for their taxes, or distributed the tax due upon them as a surcharge on all the landowners of the village or city territory.

Here too the actual figures are scarce, but those which exist are impressive. The emperor Valens (364-78) found that in the province of Asia the civic lands comprised 6,736½ fertile *iuga* and 703 (nearly 10 per cent.) 'deserted and now in bad condition and sterile'. In 451 Theodoret, bishop of Cyrrhus in N.E. Syria, complained to the government that in his city 2,500 *iuga* out of 15,000 which paid their tax in gold were registered as derelict; this works out at one-sixth. In Africa the fiscal registers in 422 showed that in the Proconsular province 5,700 *centuriae* of the state lands were deserted, and 9,002 in good condition, while in the southern province of Byzacena the figures were 7,615 and 7,460 respectively: that is, in the one province over a third of the lands were abandoned, and in the other more than half. High figures are officially recorded for other provinces also, 528,042 *iugera* (equivalent to 2,640 *centuriae*) for Campania in 395, and as much as 13,000 *centuriae* for Numidia in 451, but in these cases the proportion of deserted to cultivated land is not known.

Various explanations have been offered for this phenomenon, exhaustion of the soil, shortage of agricultural labour, and the growing insecurity caused by barbarian raids. All these may well have been contributory causes in some cases, but none seem to account for the widespread and lasting character of the trouble. The exhaustion of the soil is the least convincing explanation. The same agricultural techniques had been followed for

PLATE I



JERICO. (a) The earliest structure; a clay platform bounded by stone walls in which are set sockets for poles, dating to c. 7800 B.C.



(b) The mound of ancient Jericho. *Foreground*: spreading refugee village; *middle distance*: oasis of modern Jericho; *background*: mountains of Moab and Gilead, bounding the Jordan valley (*East*) and Dead Sea (*top right*).

PLATE II



JERICHO: (a) The rock-cut ditch, stone wall and tower of the earliest town, dating to c. 7000 B.C. (b) A typical round house of Pre-Pottery Neolithic A. (c) The enclosures, probably tanks, built against the tower.

PLATE III



JERICHO: The staircase giving access to the top of the tower. The man at the top looks down the staircase, and the man at the bottom is at the entrance to the passage leading to the foot of the staircase.

PLATE IV



(a)



(b)



(c)

ROMAN WINDOWS AND GRILLES: (a) Reconstruction of Pompeian wall decoration.

[See p. 11]

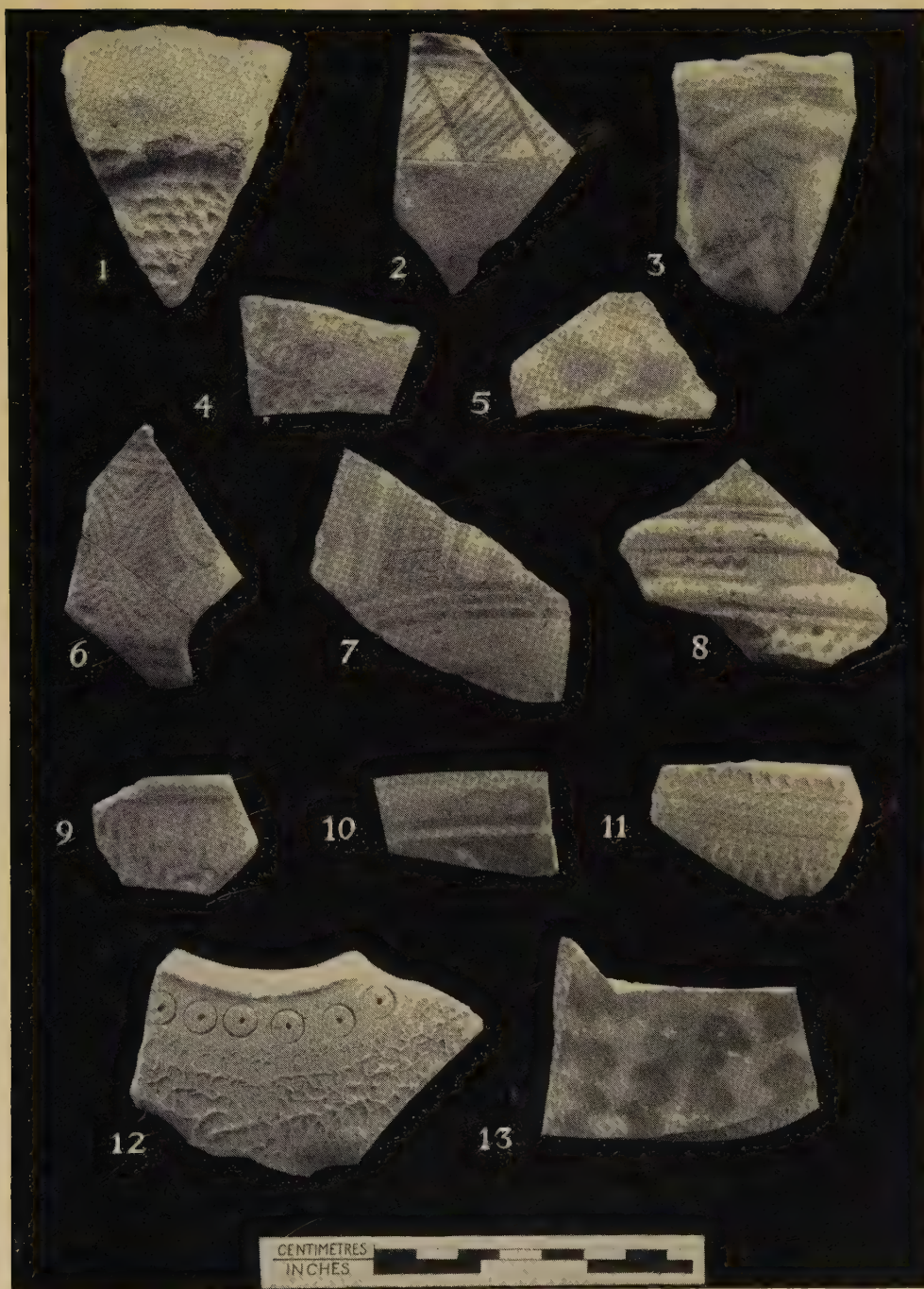
[Photo: Dr H. J. Bayen.]

(b) and (c) The Holstein grille and its reconstruction.

[See p. 14]

[Photos: Institut für Ur-und Frühgeschichte der Schweiz.]

PLATE V



BALUCHISTAN: Pottery from Anjira: 1, basket-marked; 2, Zari ware; 3-9, Nal Nundara; 10-13, wares subsequent to Period IV.

See pp. 15-24]

PLATE VI



BALUCHISTAN: Pottery and figurines from the Ornach valley.

See pp. 15-24]

PLATE VII



SARDINIA: (a) Silanus, Nuoro: tower of nuraghe Orolio from S.

[Photo: G. Cherchi.]



(b) Isili, Nuoro: vault of Is Paras (Su Idili).

[Photo: Zervos.]



(c) Barumini, Cagliari: the internal courtyard.

[Photo: Lilliu.]



(d) Torralba, Sassari: corridor in the outer walls of Santu Antine.

Photo: Zervos.

PLATE VIII



SARDINIA: Barumini, Cagliari: general view from the air of Su Nuraxi and its village.

[Photo: Istituto di Antichità Sarde, Cagliari University.]

OVER-TAXATION AND THE DECLINE OF THE ROMAN EMPIRE

centuries before Diocletian's day, and they continued unchanged for centuries later. If they were defective the yield of the land would have sunk to the minimum below which it could sink no further long before Diocletian's time; if, as is more probable, they were sound, fertility would have been preserved. The test case for this theory is Egypt: there, under the system of basin irrigation which then prevailed, the soil was annually fertilized by the silt deposited by the flood, and continual cropping could not exhaust it. Nevertheless the papyri show that deserted lands were as great a problem here as elsewhere in the empire.

The second explanation is more plausible, for agricultural labour was undoubtedly very scarce in the later Roman Empire. But the laws show that landlords sometimes abandoned estates with agricultural slaves and sitting tenants on them. These at any rate must have had some other reason than shortage of labour.

The third explanation is valid for certain areas, and may have been a decisive factor in these. The frontier provinces along the Rhine and the Danube were constantly exposed to barbarian raiders, who carried off the stock and the people from the farms and destroyed or stole the crops. Similar conditions prevailed in the African and Syrian provinces adjacent to the desert as the control of the nomads became less efficient. These facts would help to explain the very high figure of deserted land for Byzacena, which was exposed to Moorish depredations, and for Numidia, which not only suffered from the Moors, but had in 451 been recently evacuated by the Vandals. But this explanation will not account for the abandonment of lands in such provinces as Asia, Campania or Proconsular Africa, which were beyond the reach of barbarian raiders.

Contemporaries attributed the phenomenon to the high rate of taxation; as Lactantius puts it, 'the resources of the farmers were exhausted by the outrageous burden of all the taxes, the fields were abandoned, and the cultivated land reverted to waste.' This explanation on the whole best fits the facts.

We very rarely hear of peasant proprietors abandoning their holdings, and in the few cases known there is usually a special explanation. The laws always assume that abandoned land had belonged to a landlord and had been cultivated by his tenants (*coloni*) or slaves, who at this date, it would seem, usually paid a rent for their holdings like tenants (*quasi coloni*). On such land about half the yield was retained by the tenants, and—by the 6th century—between a third and a quarter was claimed by the state. The net rent, therefore, in the case of landlords belonging to the privileged categories was somewhat less than a quarter of the gross yield, and for the ordinary landlord little more than a sixth. If the tax was fairly and accurately assessed on the actual productivity of the land, the landlord still, despite its high rate, drew an adequate profit from his estates, and it is clear that the great majority of landlords did very well. For it must not be forgotten that the government drew a very large income by way of rent from the state lands, and that the vast wealth of the church and of the senatorial aristocracy was almost entirely derived from agricultural rents. The state and church lands were, it is true, privileged, paying only the basic tax without supplementary charges, and many senators by law or by special favour enjoyed similar exemptions. But many, indeed most, ordinary landlords who paid the full rate made a comfortable income out of their estates, and there was always a strong and unsatisfied demand for land as an investment.

There were, however, cases where for some reason or another the land was over-assessed. There are frequent complaints of corruption or favouritism, whereby wealthy and influential landowners got their estates lightly assessed, with the result that those of their humbler neighbours were overburdened, for the global assessment of the city territory could not be reduced except by special imperial authorization. The basic assessment,

moreover, varied very greatly in exactitude in the different dioceses of the empire. In Oriens (Syria and Palestine) there was a very elaborate system whereby the land was classified according to its use as pasture, arable, vineyard and olive-yard, and graded by quality within these classes. But in Asiana (S.W. Asia Minor) and Egypt the system was more rough and ready, taking no account of quality, and in Africa and Italy the land was assessed simply by area, without regard to its agricultural use or quality. In these cases it can be seen that a rate of tax which left the owner of good or average land a fair margin of profit might well absorb the whole rent of land of marginal quality.

The effect of rising rates of taxation was thus that increasing areas of marginal land ceased to yield an adequate profit to their owners, and finally became a burden instead of an asset. Owners of such land naturally spent less and less on improving or maintaining their estates, and tried to put up the rents, thereby driving their tenants into overworking their land, and leaving them no margin for necessary maintenance work. The evil effects of over-taxation were most evident in areas where there was much marginal land, and the assessment took no account of variations in quality. This was the situation in Africa, and it explains the extraordinarily high figures of deserted lands recorded not only in Byzacena and Numidia, where other factors contributed, but also in the Proconsular province.

Depopulation is a much more difficult question, since in the absence of statistics most of the basic facts are disputable. It is probable, though it cannot be proved, that by the accession of Diocletian the population of the empire had shrunk considerably owing to the continual civil wars and barbarian invasions of the mid-3rd century, with their attendant devastations and famines, and to the great plague which invaded the empire under Marcus Aurelius and recurred periodically during the next half-century. But from Diocletian's time no major epidemic is recorded until the appearance of the bubonic plague in 542, and relatively peaceful conditions prevailed in the western half of the empire for over a century, and until the beginning of the 7th century in the Asiatic provinces. Peasant populations normally recover rapidly after plagues and wars, since they have a very high birth rate, but so far as we can judge the population of the Roman Empire in the 4th, 5th and 6th centuries remained static at a low level, if it did not shrink. At any rate, throughout this period, as is revealed by the long series of laws tying free tenants and agricultural slaves to the soil, there was a continual shortage of agricultural labour. This shortage was not due to a flight to the towns; the laws show that *coloni* who left their landlords normally moved to other landlords, and there are more complaints of urban craftsmen migrating to the country than of peasants seeking the towns. A contributory cause of the shortage was the conscription, which fell exclusively on the peasants; but, had the population increased normally, this should not have proved so exhausting a drain as it did.

The only explanation seems to be that the death rate amongst the peasantry was abnormally high, and this must in the ultimate analysis have been due to malnutrition. Over-taxation played its part in this, though it was not the only factor. It affected directly only the peasant proprietors, and they seem *prima facie* to have been better off than the tenants, for they had to pay in taxes only up to one-third of their produce, whereas tenants paid about one-half in rent. In actual fact the position of the peasant proprietors was not so favourable as it seems. Their holdings, having been divided and subdivided for generations by inheritance, were normally much smaller than the tenants' farms. The assessment of the tax worked out unfavourably for them, for it was calculated on the aggregate of the value of the land and of the number of persons registered on it, so that a man with a small farm and a large family might pay more than a man with a large farm and no dependants. Finally, peasants, having neither money to bribe the officials nor influence to intimidate them, were often over-assessed.

OVER-TAXATION AND THE DECLINE OF THE ROMAN EMPIRE

In these circumstances a peasant proprietor might well find it difficult to rear his family. But his chief difficulty was that he could accumulate no reserves, and if barbarian raiders destroyed his crops or stole his stock, or a drought or an invasion of locusts ruined the harvest, he either starved or had to borrow, with the result that his land eventually passed to his creditor. In this way an increasing number of peasant proprietors sank to the condition of tenants, whose standard of living was even lower.

These conclusions can be only tentative, but the evidence does suggest that over-taxation played a significant rôle in the decline of the empire. It can be established that the taxes rose from Diocletian's time until they absorbed a very high proportion of the yield of the land. It can plausibly be argued that the high rate of tax was the main reason for the abandonment of marginal land and the consequent impoverishment of the empire. It is at any rate probable that it was a major factor in reducing the man-power of the empire, and thereby contributed directly to its military collapse.

Book Chronicle—*continued from p. 9*

WESSEX: BEFORE THE CELTS. *By the late J. F. S. STONE. pp. 152, 22 text-figures, 72 photographs. Thames and Hudson, London, 1956. 25s. Volume Nine in the Ancient Peoples and Places series, prepared for publication by Professor Piggott.*

PREHISTORIC BRITAIN. *By R. R. SELLMAN. pp. 62. Methuen, London. 10s. 6d.* The author has crammed into this volume of the Methuen's Outlines series a great deal of information; his own maps and plans have been augmented with pictorial reconstructions by Alan Sorrell. A sensible and very well illustrated introduction.

L'ART ET L'HOMME. *Edited by R. HUYGHE. pp. 366, 947 text illustrations and 16 colour plates. Larousse, Paris, 1957. 5000 francs.* The first volume of a three-volume history of art; it goes from the beginnings to Rome and Hellenistic Greece. The standard of illustrations and layout is exceptionally high; and the team of contributors, which include Georges Contenau, Claude Schaeffer, Christopher Hawkes, Ole Klindt-Jensen, Gilbert Charles Picard and Vadime Elisseeff, could hardly be bettered. An essential volume for every archaeological library and should be translated into English.

THE TIWI: THEIR ART, MYTH AND CEREMONY. *By CHARLES P. MOUNTFORD. pp. 208, with 64 pages of plates (two in colour). Phoenix House, London, 1958, 65s.* A brilliant documentary account of the inhabitants of Melville Island, off the north coast of Australia who for centuries thought they were the only people in existence, written and illustrated by the author of *Brown Men and Red Sand*. Of special interest to students of antiquity are the elaborate burial ceremonies of the Tiwi, which last for between three and four months.

IL NURAGHE DI BARUMINI E LA STRATIGRAFIA NURAGICA. *By G. LILLIU. Gallizzi, Sassari, 1955. pp. 386, 80 plates.* A reprint from *Studi Sardi*, 1952-4, giving the full results of the excavation of this remarkable site (see also pp. 32-8 above). 4000 lire.

ARCHAEOLOGICAL FIELD-WORK. *By R. RAINBIRD CLARKE. pp. 27. The Museums Association, London, 1958.* A short, clear handbook: one of the sections of the *Handbook for Museum Curators* which is in course of publication.

[*continued on p. 49.*]

New World Origins : A Reappraisal

by CHESTER S. CHARD

Dr Chard is Lecturer in Anthropology at the University of Wisconsin, and Editor for Soviet Asia in the Council for Old World Archaeology and the Far Eastern Prehistory Association. He devotes himself especially to following the results of Soviet archaeological work, and has recently visited the U.S.S.R.

IT has been the general assumption that all the oldest New World cultures were direct importations from Asia—more specifically, from Siberia—and that the prototypes for their distinctive features must be sought in this latter area. A number of successive migrations by very different groups have been taken for granted to account for the varied archaeological picture in Palaeo-Indian times, to say nothing of the subsequent linguistic and physical diversity, but any contacts with the Old World on the Neo-Indian horizon have been generally viewed with suspicion. No specific evidence in support of this viewpoint has ever been adduced, it is true, but so long as Siberia remained a *terra incognita*, it was assumed that the proofs must be there, awaiting only the spade of the excavator. The proposition was argued, as it were, on the grounds of historical necessity.

However, as a result of very extensive and competent work by Soviet archaeologists in the past two decades, there is now available a growing body of data on the prehistory of northern Asia that deserves the attention of Western scholars. Exciting new discoveries are also being made by Japanese archaeologists which contribute significantly to the picture. Unfortunately, this material is still little known in the Western world, owing to a combination of bibliographic difficulties and linguistic barriers. But it is high time for us to realize that north-east Asia is no longer a white spot on the map of prehistory. We have reached the point at which hypotheses of New World origins, to be tenable, must be checked against the available facts.

It is the purpose of this essay briefly to survey north-east Asian prehistory from the viewpoint of early man in America, and to indicate some of the conclusions that are suggested by the evidence at hand as of now.

North-eastern Asia, like Alaska, was glaciated only in the mountain regions even during the maximum extension of the ice sheets (1). As in Alaska, the final glaciations are thought to have been confined to higher elevations, or never to have spread far from their mountain sources. The terminal stage, possibly equivalent to the Fennoscandian (or Valdres in America), was represented only by scattered remnant glaciers which have since completely disappeared. Unlike Alaska, however, the adjoining half of the continent was very largely ice-free, and at no time was the way blocked between Bering Strait and this unglaciated hinterland—at least via the route lying south of the ice along the shores of the Sea of Okhotsk. During the more moderate final glaciations a northern route was certainly available as well, and conditions in general would have been more favourable to the presence of either animals or man in this general area. The nature of the routes is such that they would have been most feasible at times of lowered sea level associated with glacial advances. Thus, even at those times when Alaska was apparently an isolated pocket walled off by ice barriers from the rest of North America, it was in constant communication with ice-free

NEW WORLD ORIGINS: A REAPPRAISAL

Asia. In fact, from the standpoint of biology and human geography, it would perhaps be more accurate to think of Alaska as forming part of Asia at such times.

Now we know that early man came to America, and even what routes he must have followed. But as yet we have found no trace of these migrations in Siberia. It is my own belief that most of the record of such movements has been obliterated by rising sea levels. So we are still asking the basic questions: when did these people come, from where did they come, who were they, and what did they bring with them?

Prehistoric north-east Asia is strikingly divided into two cultural spheres. This is evident for the Neolithic (2), and perhaps is even more pronounced the farther back you go in time. These two spheres are the interior, whose oldest Palaeolithic culture is of European type, and the Pacific coast, which is characterized by a chopping tool tradition with south-east Asiatic affinities. Let us see what each of these major areas has to offer the New World on a preceramic horizon.

The interior boasts at least 100 Palaeolithic sites, some of which have been known for eighty years. They have been the subject of considerable study, and all new finds seem to fit readily into the established picture (3). Three chronological stages are recognized, all closely related. The oldest, which we will label Palaeolithic I, is by fairly general agreement no older than the end of the Würm III stage of the Alpine glacial sequence or its probable American correlate, the Cary substage. If we assume the essential validity of the available radiocarbon dates (which I shall do throughout this paper), then these earliest remains are no older than about 12,000 years. As far as we know, interior Siberia was uninhabited prior to this time, in which case the oldest American cultures could hardly have stemmed from here.

Palaeolithic II in the interior was definitely later, but not by too much. The environmental conditions suggest to me a possible correlation with the Fennoscandian (Valders) stage and a date of perhaps 9,000 to 10,000 years ago. Palaeolithic III is definitely post-glacial and, according to the latest opinion of Professor H. L. Movius, is probably around 8,000 years old. Strangely enough, there are no Palaeolithic sites north of Yakutsk, nor is there in fact any evidence of the occupation of arctic Siberia by man prior to about 2500 B.C.

Now what was the contemporary picture in the New World (4)? If we assume that the Sandia complex of New Mexico is definitely older than the Clovis, though without accepting any of the alleged carbon 14 dates, it is probably far older than the earliest culture in interior Siberia. Clovis and related complexes, on the basis of the best guess dates, would be partly contemporary and partly older than Palaeolithic I, while the carbon-dated lowest level at Danger Cave (Utah) and the Early Humboldt culture (Nevada) would be contemporary. The Folsom complex and the earliest level at the Five Mile Rapids site on the Columbia River would equate with Palaeolithic II, and the so-called 'Yuma' complexes with Palaeolithic III.

Although it would be theoretically possible to derive later manifestations such as Folsom from interior Siberia, there is no other basis whatsoever for attempting it. None of the Siberian Palaeolithic cultures has so far shown any specific resemblances to New World ones. In particular, the earlier Siberian stages lack the most conspicuous New World features: pressure flaking and bifacial projectile points. Thus the local development of Folsom out of antecedents of Clovis type is far more probable. An ironic aspect of the picture is that the people of the oldest Palaeolithic stage so perfectly fit the supposed requirements for the early migrants to America; they were periglacial hunters of Pleistocene big game, adapted to life on the tundra and well equipped to travel through the Arctic, even to perhaps possessing skin clothing of the familiar type. Yet they apparently remained in southern Siberia and fathered the subsequent local cultures.

ANTIQUITY

All in all, interior north-east Asia offers little help to the student of New World origins. There is no present evidence of movements from here in preceramic times, and we are forced to conclude that our well springs must lie in the only remaining area—the Pacific coastal zone. Unfortunately, data are just beginning to come in for this region and the picture as yet is very fragmentary and unsatisfactory. The best we can do is simply to summarize the available finds and then see what conclusions may be possible.

In north China, far back in the dim reaches of the Middle Pleistocene, there is the industry of Choukoutien and *Sinanthropus*. More relevant to our purpose is the so-called Upper Cave here, not yet adequately dated, but generally placed on the Pleistocene-Recent boundary. In current parlance this would be about 10,000 years ago, or roughly contemporary with Palaeolithic II in the interior. The artifacts, in any case, are so non-diagnostic that they will be of scant assistance even when the age is finally determined. The human remains in the cave, on the other hand, are of great interest since they give us our only glimpse of the terminal Pleistocene population of eastern Asia from which the New World migrants were probably drawn. Birdsell (5) sees these Upper Cave people as dihybrids of the two racial types present in the area at this time; namely, his so-called Amurian—a primitive Caucasoid ancestral to the Ainu—and a dolichocephalic Mongoloid type now submerged in Asia by the modern brachycephalic Mongoloids. He infers that early migrants to the New World would show relatively few Mongoloid characteristics, but that this element could be expected to increase generally with the passage of time, completely obscuring in the end the not inconsiderable Amurian genetic contribution. This view assumes, of course, that the Mongoloid expansion was an explosive and recent phenomenon.

Japan must be divided into two areas that have been separated since before the Pleistocene and have developed their own cultural patterns. One of these is Hokkaido, where the early links are with Sakhalin and the adjacent Siberian mainland; the other comprises the main and southern islands of Japan. The latter, according to the current opinion of Japanese geologists, has not been connected with the continent since the Middle Pleistocene, and we must conclude in this case that it could have contributed nothing to the New World until the development of navigation. On the other hand, its culture history during the late Pleistocene probably reflects in a general way that of the adjoining continent, of which we are totally ignorant—making due allowance for the effects of isolation. The latest evidence shows the presence of a chopping tool industry whose closest affinities are not with Choukoutien but with distant Java (6). A number of other preceramic assemblages have recently been recognized whose age is highly controversial, but probably in most cases post-glacial (7). There seems general agreement that the microlithic industries are the most recent, in which case they would not long antedate the appearance of pottery. Somewhat older, but still late in the hypothetical sequence, is the appearance of bifacial projectile points and pressure flaking. The latter is rather crude, and a far cry from early American craftsmanship. These later lithic manifestations represent such a marked departure from the extremely crude artifacts associated with the older tradition that one is forced to assign them to a period when water-borne contacts with the outside world had been established. However, their significance, if any, for our problems will have to await a better determination of their cultural and chronological status.

Hokkaido appears to have had a land connection with the continent during the fourth glacial period and its history is therefore more closely related to that of the ancestral Americans, though from its geographical position it was probably a cultural cul-de-sac rather than part of the main stream. No indubitable Palaeolithic remains have as yet been discovered here, but the search has just begun. If found, I would expect them to include

NEW WORLD ORIGINS: A REAPPRAISAL

chopping tools. Very recently a few stratified or river terrace sites have been located whose oldest levels may prove to be late glacial or at least early post-glacial (8). Most of the non-ceramic assemblages are characterized by blades of large or moderate size. Burins appear midway in the hypothetical sequence; bifacial projectile points and pressure flaking are late; and a microlithic industry most recent of all. One manifestation of the latter is said to recall the Denbigh Flint Complex of Alaska. We can say little more until the appearance of fuller reports and the promised radiocarbon dates. Only one point is clear: all evidence indicates the relative recency of the microlithic industry.

Of the known early sites in the Pacific coastal zone, the closest to the New World are those in the Maritime Province of Siberia and at nearby Khabarovsk on the Amur (9). No remains north of this area antedate 2500 B.C., and few approach it. The oldest traces of man here are at the key site of Osinovka north of Vladivostok and are represented by chopping tools and pebble scrapers in the south-east Asiatic tradition. A macrocore and blade industry is apparently but not positively associated. Unfortunately, the dating is tenuous; we can only be sure that the complex antedates the local Neolithic—probably by a considerable span, however. The weight of evidence suggests that it may be roughly contemporary with Palaeolithic III in the interior. It could be younger. And geologists report indications of a warm period followed by cold that, if substantiated, might perhaps correlate with Allerød and place it as far back as 11,000 to 12,000 years. There is certainly no justification for any older dating on these grounds, however. A somewhat different assemblage was revealed at the Tadusha workshop site. Two laurel-leaf dart points show close resemblance to those at the Palaeolithic III site of Verkholskaia Gora near Irkutsk and suggest the date; otherwise, the artifacts are non-diagnostic scrapers and cutting tools. There are no blades, no microliths and no pressure flaking. The sites in the vicinity of Khabarovsk are claimed to show the greatest resemblance to the New World of any Siberian materials. Among the elements said to be present are 'Solutrean'-type pressure flaking, blades and laurel-leaf points. Unfortunately, the material remains unpublished. Recent excavations have established a pre-Neolithic age for the complex, but this need be no more than 5,000 years. There is no basis for suspecting any great antiquity and none has been asserted. The last site that need concern us here is Tigrovaia, where the few surface finds included a polyhedral core tool of a type represented at the University of Alaska campus site. Similar artifacts are common in the Mongolian Neolithic and have also been found on the Amur in a Neolithic context. There are no grounds for placing Tigrovaia any earlier.

Mongolia (10) occupies a somewhat intermediate position between coast and interior in preceramic times. The earliest cultural horizon identified here shows basic similarity to Palaeolithic III of the Lake Baikal region, with a stone industry centering around split pebbles and disc-shaped cores. The abundant microliths which so overwhelmingly dominate the archaeological picture must be relegated to a Neolithic horizon. There is now no evidence for any Mesolithic in Mongolia, since a recent reexamination of N. C. Nelson's famous site at Shabarakh-usu has revealed the presence of pottery in all levels.

Now what conclusions may we draw from this brief survey of the Pacific coastal zone of north-east Asia? Firstly, there is a long-established and tenaciously-enduring core-tool tradition in this area that could have fathered any similar industry in the New World—even in pre-Wisconsin (pre-Würm II) times if necessary. Although we cannot point to specific resemblances, still we have in America materials that would be at home in such a tradition, as Linton suggested some years ago. Secondly, the rare occurrences of bifacial projectile points and pressure flaking are relatively late, rather crude, or both; they cannot possibly account for the high level of early craftsmanship in the New World. Thirdly, although microlithic industries are present in a number of regions, and abundant in one,

ANTIQUITY

they seem everywhere to be late: either associated with pottery or immediately preceding it. There are definite resemblances to some of the elements in our American Arctic microlithic materials, and a direct historical relationship seems quite probable. This, of course, would indicate an equally late dating for our American microliths, which I have long suspected. It is certainly not without significance that a core and blade industry appears in the continental United States only after the Archaic.

We are left, in the end, with a number of quandaries. Asia offers no antecedents of adequate age for such conspicuous early New World traits as diagonal flaking, pressure flaking in general, laurel-leaf or any sort of bifacial projectile points. The nearest occurrences of any of these on a pre-Neolithic level are in European Russia. We are forced to the conclusion that they must represent independent New World inventions. Their later presence in Siberia along with a number of types resembling early American stone artifacts even raises the distinct possibility of some reverse cultural transmission from America to Asia.

In fact, the Asiatic evidence at the moment suggests an original movement to America of crude chopping-tool cultures, probably early in the Wisconsin (Würm II) stage—to allow the needed time—and the indigenous development of all early New World cultures on this simple foundation, difficult as it may seem. There is no *present* evidence of further contacts with the Old World until relatively recent times, when the arrival of the microlithic industries seems to inaugurate a period of considerable cultural interchange that took place, curiously enough, only after the probable severance of the land connection between the two hemispheres. This interchange quite probably operated in both directions. Such a view of early American culture as an independent development from very simple beginnings was, of course, in vogue some decades ago before the discovery of the Palaeo-Indian cultures, though on a much-reduced time scale. Perhaps the first Americans were not unlike the Fuegians after all.

But what of the successive migrations that have so long been assumed to account for the physical and linguistic diversity of the New World? It would seem likely that the extensive interhemispherical cultural movements via Bering Strait that appear to have begun perhaps 5,000 years ago must have involved, to some extent at least, movements of people as well. If there were in fact successive migrations subsequent to the original very early settlement, they may be very largely associated with this recent period—with the microliths, with the Woodland ceramic tradition, with the maritime Eskimoid horizon; unless, of course, we should succeed in bringing them across the Pacific farther south. Certainly, there is no comparable evidence for them earlier.

REFERENCES

- (1) The most recent authoritative mapping of Siberian glaciations will be found in the *Bol'shaia Sovetskaia Entsiklopediia*, 2nd ed., vol. 47 (1957), facing p. 240.
- (2) See the author's 'Neolithic Culture Areas of Northern Asia: a Preliminary Definition', in *Proceedings, V. Internationaler Kongress für Vor- und Frühgeschichte*, Hamburg, 1958 (in press).
- (3) Summarized most recently in 'An Outline of the Prehistory of Siberia. Part I. The Pre-Metal Periods', *Southwestern Journal of Anthropology*, vol. 14, no. 1, pp. 1-33 (Albuquerque, 1958).
- (4) For an admirable survey of this subject, see H. M. WORMINGTON, *Ancient Man in North America* (4th ed.), Denver Museum of Natural History (1957).
- (5) JOSEPH B. BIRDSELL, 'The early Peopling of the Americas as Viewed from Asia', in William S. Laughlin and S. L. Washburn (eds.), *Physical Anthropology of the American Indian*, pp. 1-68 (1951).

NEW WORLD ORIGINS: A REAPPRAISAL

- (6) JOHN MARINGER. 'A Stone Industry of Patjitanian Tradition from Central Japan', *Kokogaku Zasshi*, vol. 42, no. 2 (Tokyo, 1957).
- (7) The best survey to date will be found in Sosuke Sugihara (ed.), 'Jomon Bunka', vol. 3 of the *Nihon Kokogaku Koza* (Tokyo, 1956), ch. 1.
- (8) Cf. CARLETON S. COON. 'An Anthropogeographic Excursion Around the World', *American Anthropological Association Memoir*, no. 86 (1958), pp. 32-3.
- (9) Summarized in the author's 'Mesolithic Sites in Siberia', *Asian Perspectives (Bulletin of the Far Eastern Prehistory Association)*, vol. 2, no. 1 (Tucson, 1958).
- (10) See A. P. OKLADNIKOV in *Vestnik Drevnei Istorii*, 1951, no. 4, pp. 162-74 (Moscow). No fuller account is yet available of the latest Soviet work in Mongolia.

Book Chronicle—continued from p. 43

- SYRACUSE. By MARGARET GUIDO. pp. 96, including 12 plates and 15 line illustrations. Max Parrish, London, 1958. 10s. 6d. The first and only guide-book in English to the history and principal monuments of what Cicero called 'the loveliest of cities'.
- PREHISTORIC CHINA. By CHENG TE-K'UN. pp. 250, 44 plates. 30 text-figures, 3 maps, 4 tables. Heffer, Cambridge, 1959. 42s. The first volume of an eight-volume work on Archaeology in China by the former Curator of the University Museum in Chengtu, Szechwan, now Lecturer in Far Eastern Art and Archaeology at Cambridge.
- LINANT DE BELLEFONDS. The journal of a voyage to Meroe in 1821-2. Edited by MARGARET SHINNIE. pp. 199, 28 plates, end-paper maps. Sudan Antiquities Service, Khartoum, 1958. 25s. Being occasional paper no. 4 of the Sudan Antiquities Service.
- ARQUEOLOGIA; PROPOSITOS Y METODOS. By PEDRO DE PALOL. pp. 102, 100 plates. Valladolid, Seminario de Estudios de Arte y Arqueologia, 1958. A short, well-documented, and well-balanced essay on the history, principles and methods of archaeology.
- THE MAP OF GREAT BRITAIN C. A.D. 1360. A facsimile of what is usually known as the Gough Map, one of the treasured possessions of the Bodleian and the earliest known road map of Britain. It is printed in colour with two overlays (a transcript and a modern map), and is issued with an introductory booklet by E. J. S. PARSONS. *The Bodleian Library in association with the Royal Geographical Society*, 1958, 50s.
- THE ROUND TOWERS TO ENGLISH PARISH CHURCHES. By C. J. W. MESSENT. pp. 369 with 180 full page line-illustrations. Fletcher & Son, Norwich, 1958. 30s.
- COLLINS' GUIDE TO ENGLISH PARISH CHURCHES. Edited by JOHN BETJEMAN. pp. 500, 64 plates, 15 text-figures. Collins, London, 1958. 30s.
- EXCAVATIONS AT CAMERTON, SOMERSET. By W. J. WEDLAKE. pp. 284, 23 plates, 63 text-figures. *The Camerton Excavation Club*, Bath, 1958. 63s. An account of thirty years' excavation, covering the period from the Neolithic to Saxon times.
- ARCHAEOLOGICAL DISCOVERIES IN SOUTH ARABIA. By R. LE BARON BOWEN and F. P. ALBRIGHT. pp. 315, including 214 plates. *The Johns Hopkins Press*, Baltimore, 1958. 80s. This is the first of a series of volumes devoted to the publication of the work done between 1950 and 1953 in South Arabia by the American Foundation for the Study of Man, under the leadership of Wendell Phillips and the successive direction of Drs. W. F. and F. P. Albright.
- METHOD AND THEORY IN AMERICAN ARCHAEOLOGY. By G. R. WILLEY and P. PHILLIPS. pp. 270. *University of Chicago Press*, 1958. 36s.
- LE MYTHE DES CITÉS LACUSTRES. By O. PARET. pp. 148 with 70 illustrations. A full discussion of the archaeological interpretation of 'lake-villages'.

Notes and News

STONEHENGE RESTORED

Within the last century there have been many proposals that the stones which have fallen at Stonehenge in comparatively recent times should be re-erected. These plans referred mainly to the sarsen trilithon (stones 57, 58 and 158) which fell outwards 'with a very sensible concussion or jarring of the ground' on 3 January, 1797, and to one of the uprights and its attached lintel (stones 22 and 122) which collapsed in a violent gale on the last day of 1900. On falling, this lintel struck the already fallen trilithon and broke into two pieces, and it is thought that it may have been cracked as early as 1655. Stone 21, another upright of the outer circle, was left in a leaning position by the collapse of stone 22 and lintel 122. Following excavations at Stonehenge by Professor Stuart Piggott, Professor R. J. C. Atkinson, and the late Dr J. F. S. Stone, the Society of Antiquaries recommended to the Ministry of Works that the six stones already mentioned should be re-erected. While they endorsed the Ministry of Works policy of preserving the majority of displaced stones in their existing fallen position as a survival of damage in ancient times, the Ancient Monuments Board agreed with the recommendation of the Society of Antiquaries to raise only the stones fallen in recent times. The Minister of Works accepted the Board's advice; the matter was discussed in the House of Commons (*Hansard* 585, no 86; *ANTIQUITY*, 1958, 68); work began at Stonehenge in March 1958 and was completed in June.

Besides restoring the circle to the appearance it presented before the events of 1797 and 1900, the 1958 operations enabled the better preservation of the prehistoric carvings recently found on stone 57 which were being gradually obliterated by the feet of visitors walking across them. One of these is the *bouclier-écusson* or *petit marmite* symbol of the south Breton Passage Grave art, and may be a stylized representative of the Mother-Goddess figure so realistically represented in some of the Marne rock-cut tombs and on the underside of the capstone of the Déhus in Guernsey (see R. J. C. Atkinson, *Stonehenge*, 1956, 30ff; and Crawford, *ANTIQUITY*, 1954, 25ff).

The weight of the stones being re-erected at Stonehenge (two of them weighed as much as 45 tons each) made their withdrawal and re-erection a feat of considerable difficulty, the responsibility for which has rested upon the architect in charge of Ancient Monuments at the Ministry of Works, in consultation with the Ministry's engineers. For the lifting and reinstatement of the larger stones a 60-ton mobile crane was borrowed from the Ministry of Supply, smaller cranes being used for the lighter lifts and general site work. A 4-ton steel frame with twelve spring-loaded lifting points was specially designed for the withdrawal of the stones from their fallen position. For their re-erection a steel 'corset' was made in two halves in such a way that any of the larger stones could be clamped within the 'corset' without harm to their surfaces. The frontispiece shows the 1958 restorations at Stonehenge in progress.

During these restorations excavations were conducted by Professor Piggott and Professor Atkinson; their main purpose was to identify and excavate the stoneholes of the stones to be re-erected—which have now been bedded in reinforced concrete. Unconnected with the

NOTES AND NEWS

primary purpose of the 1958 excavations a small excavation was made around the Altar Stone in order to ascertain its precise shape and dimensions, nowhere previously recorded. A thick layer of disturbed modern soil was found around the stone, and initials of late 17th century type cut on the edge of the stone on the south-west side show that at that date it lay clear of the turf, and has since become buried. The stone proved to have one squared end and one trimmed obliquely, and must have stood upright at some stage of the monument's history. Behind it, on the axis immediately to the south-west, were the remains of a much mutilated hole in which it may have originally stood.

An archaeological observation of some interest was made when the Outer Circle lintel 122 came to be lifted and studied for re-setting. Instead of one pair of mortice-holes on the underside, there were two pairs at different spacings and of differing depths—one shallow and one deeper pair. The circumstances suggest that the Outer Circle lintels were dressed and 'prefabricated' to the extent of having mortices at standard spacing cut in them, before they were actually measured for fit on their uprights, and that anything approximating to a 'closing error' in the calculated spacing would need rectification, as in this instance.

The public interest in the 1958 work at Stonehenge was reflected in the figures of visitors. Always the second most visited Ancient Monument in Britain (the Tower of London is the first), 90,000 more people visited Stonehenge between January and September 1958 inclusive than the 211,670 who visited it in the comparable nine months of 1957. During March, April and May, while the work was in its earlier stages, the number of visitors was double that of the same months in 1957.

The Editor is grateful to the Ministry of Works and Professor Piggott for supplying the information on which the above note is based and the photograph reproduced as the frontispiece of this issue and volume of ANTIQUITY. Professor Piggott points out that one of the minor and incidental results of the 1958 restoration of Stonehenge is to make out of date the device which has graced the cover of ANTIQUITY for thirty-two years since its foundation in 1927. We have therefore asked Mr Brian Hope Taylor to produce a new device for us of Stonehenge Restored, and the discerning reader will already have noticed the difference on the cover. The original cover was designed by Mr Ellis Martin of the Ordnance Survey.

SCHOOLS OF ARCHAEOLOGY IN MAN AND WALES, 1959

The British Summer School of Archaeology meets each year at a different centre and a specific topic or problem is chosen as the theme of a series of lectures, discussions and excursions. In 1959 two such Schools will take place, the first in the Isle of Man between 4 and 11 April, and the second, to deal with Prehistoric and Roman Wales, at Bangor, Caernarvonshire, between 8 and 15 August. The meeting at Douglas, which will discuss the archaeology of the Isle of Man, includes as lecturers Professor Dr Gerhard Bersu, Dr N. K. Chadwick, Mr A. M. Cubbon, Mr Peter Gelling, Mr B. R. S. Megaw, Mr C. A. Raleigh Radford and Dr F. T. Wainwright. The Bangor meeting will be opened by Sir Mortimer Wheeler, and the lecturers will include Dr Charles McBurney, Professor Grimes, Dr Savory, Mr A. H. A. Hogg, Professor Ian Richmond, Mr Leslie Alcock, Professor Idris Foster, Professor R. J. C. Atkinson and Dr Glyn Daniel. The latest day for enrolment for the Isle of Man meeting is the date of the publication of this issue of ANTIQUITY, namely 1 March, but applications from readers of ANTIQUITY who have not heard of the scheme until they read these words will be accepted if they write at once to the Honorary Director (Dr F. T. Wainwright, Ingleby, Newport-on-Tay, Fife). The latest date for the Bangor meeting, which is being held in association with the University of Wales, is 1 May, 1959.

EARLY SHIPPING IN EGYPT

In his article on 'Early Shipping in the Near East' in *ANTIQUITY* xxxii, pp. 220 ff., Dr Barnett has revived and attributed to his colleague Mr T. G. H. James that hoary delusion that the boats on the Decorated vases of the Gerzean period may not be boats but stockades, the chief reason for which is the artistic licence which may have given those boats more oars than they actually had. Any doubts as to their being boats should be set at rest by comparing an Amratian shallow oval dish, which has a plan of a boat painted on it (FIG. 1), with one of the boats on a typical early Gerzean pot (FIG. 2).¹ This comparison was made in 1933 by Flinders Petrie in an article on 'Egyptian Shipping'.²



FIG. 1 (half actual size).

These boats on Gerzean pots are of the greatest interest, and from the fact that over one of the two cabins or shrines, which they always carry, is nearly always placed the emblem of a divinity (sometimes but not always recognizable as the emblem of a divinity known in historic times, e.g. Neith, Hat-hor, Min or Horus), I am inclined to think that the inspiration for these boats may have come, as the idea of painting designs on pots must have come, from Iraq. The reason for the boats, and indeed for all the other designs on the Decorated pots, is thus probably a magic one. Indeed it is not unlikely that these pots were solely intended for burial with the dead. The boat may be the boat of life, and that may explain why, on the earliest Decorated pots, it carries clearly recognizable vegetation sprouting from its prow, not intended either as a sail or as a shelter for the steersman, as has been sometimes suggested.

On two well-known cylinder seals from Iraq³—Frankfort attributes them to the Uruk period and Contenau to the Jemdet Nasr period⁴ and so contemporary with the Gerzean period in Egypt—the reeds, of which the boat is made, appear to be sprouting, often at the prow. On the seal here illustrated (FIG. 3) the boat, besides carrying a divinity, carries a cabin or shrine and also the shrine of the goddess Inanna on the back of a bull. It seems to me that we have in these prehistoric Iraq boats the probable prototype of the vegetation

¹ Petrie, *Prehistoric Egypt Corpus*, C 70M and D 47G. Both pots are in the Petrie Collection at University College, London.

² *Ancient Egypt*, 1933, pp. 1-14 and 65-75, and Figs. 47-52.

³ *ANTIQUITY* xxxii, pl. xxia.

⁴ Frankfort, *Cylinder Seals*, pl. vie; Contenau, *Manuel d'Archéologie orientale* iv, Figs. 1084 and 1086.

NOTES AND NEWS

at the prow and of the two cabins or shrines, one with the sign of a divinity—with streamers perhaps deriving from the tail of the well-known emblem of Inanna—on the Decorated pots from Egypt. (The occurrence of shrines of divinities on boats in prehistoric times must be connected with the fact that in the historic period in Egypt, the image of a deity was usually carried in a shrine on a large model boat on the shoulders of a number of priests, as is represented frequently on the walls of temples, at Luxor and Karnak for instance.)

FIG. 2. Boat on typical early Gerzean pot (half actual size).



FIG. 3. Boat on cylinder seal from Iraq (enlarged).

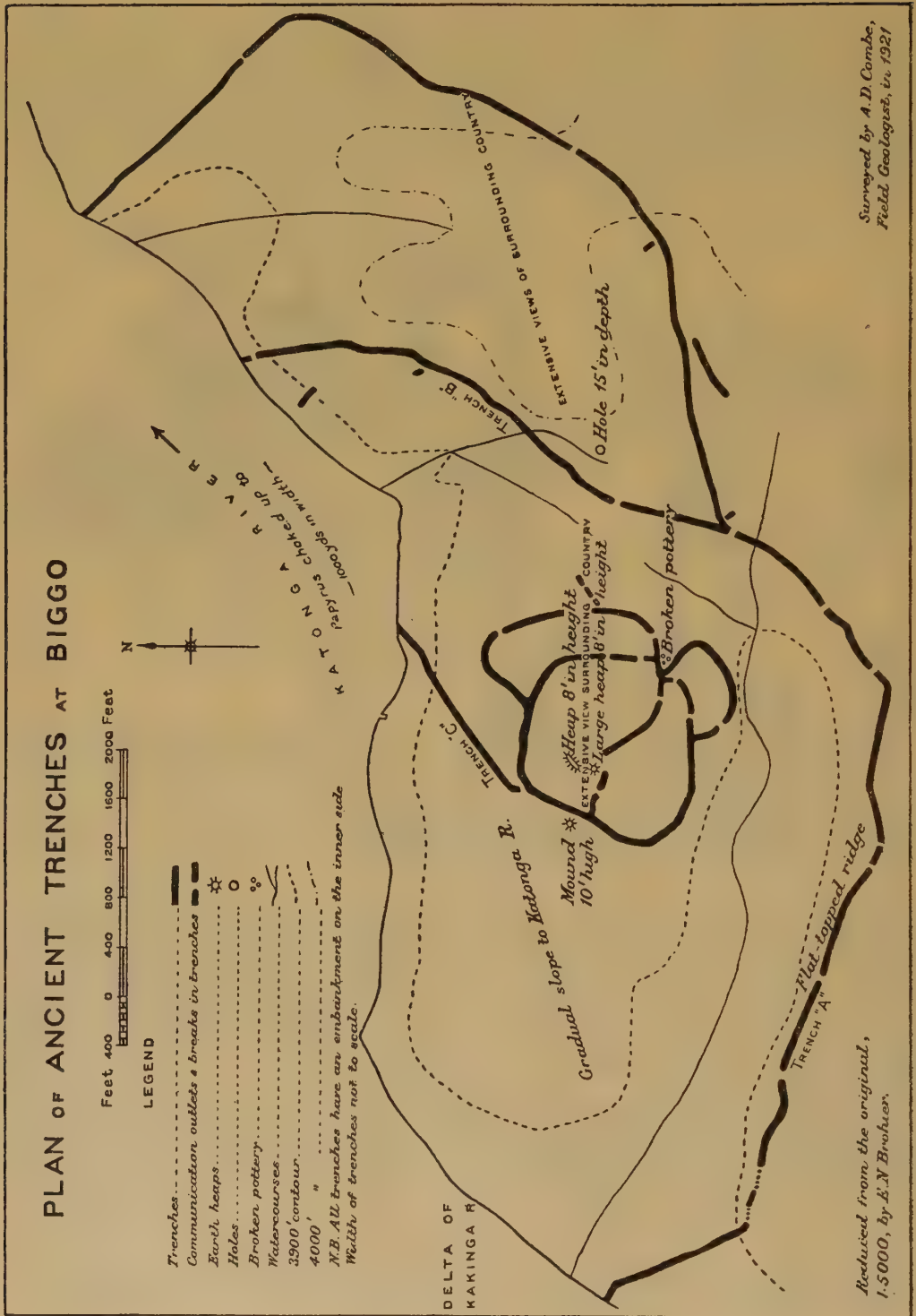
In this connection, it is interesting to note that Prof. H. Larsen has recently produced important support for Vivi Laurent-Tackholm's identification of the plant, which often appears on Decorated pots along with the boats, and was previously thought to be the aloe, as *Musa ensete*, a giant banana known in 17th-century Abyssinia as the 'tree against hunger' from its many uses for food and shelter.⁵ It would seem therefore to be represented on these pots also for a magic reason (to provide the dead with food and perhaps also with means of shelter).

Incidentally Dr Barnett is incorrect in attributing the earliest known representation of an Egyptian ship with a sail to 'an Amratian vase dated to c. 3500 B.C.'. It actually occurs on a Late Gerzean vase, probably to be dated nearer 3100 B.C., which is correctly described by Childe,⁶ as a 'late Decorated pot'.

A. J. ARKELL

⁵ *Annales de Service*, LIV (1957), pp. 239-240.

⁶ *New Light on the Most Ancient East* (1952 ed.), Fig. 40 (not Fig. 51, to which Dr Barnett refers).



Surveyed by A.D. Combe,
Field Geologist, in 1921

FIG. 1.

Reduced from the original,
1:5000, by E.N. Brohier.

EXCAVATIONS AT BIGO, UGANDA

The large earthwork site at Bigo (or Biggo) on the Katonga river in Uganda has been known since 1909 and has already been described in this Journal and elsewhere,¹ and an air photograph published.²

As the major ancient site of Post-Paleolithic times in Uganda, and as one presenting an obvious problem as to use and date in a country where so little is known, the new Antiquities organization of the Uganda Government chose it as the first site to be excavated in a planned scheme of field work intended to throw light on the prehistoric Iron Age of this part of Africa.

Legend has long associated Bigo with the people well known in the mythology of the area as the Bachwezi. Who the Bachwezi were and when they flourished are among the chief problems of Uganda's history, but the general consensus of opinion is that they were a cattle-owning, warrior aristocracy coming from the North (perhaps from south-west Abyssinia) and dominating the settled agriculturalists of Western Uganda. It may be that the present-day Bahima, nomadic and cattle-owning and of a markedly different physical aspect from the Bantu peoples amongst whom they live, are descendants of these Bachwezi.

The Bigo earthworks enclose an immense area and, with the limited resources available, only a small preliminary investigation could be carried out.

Attention was concentrated on the centre of the enclosure where earlier visitors had identified two mounds (the 'humps' of Wayland's plan) (FIG. 1). Clearance of the bush in this central area which took two weeks hard work by some twenty men, revealed that there were three mounds in the area enclosed by a ditch with a gap in it at the south side of Mound A (FIG. 2). The stretches of ditch to the south of the mounds were almost completely silted up, and differ markedly from the other ditches of the site which, though heavily overgrown, still retain almost their original profiles.

A trench was dug across this ditch and into Mound A, the largest of the three. This mound, shown after clearance of the bush to be almost flat-topped, was found to have been made of the material (gneiss) dug from the ditch. It is entirely man-made and was thrown up in one single operation; although tip lines can be seen in the section there is no stratification or change in the material of which it is made. This material was almost completely sterile and only a very few sherds were found in it. The purpose of a large mound of this type is not clear, though Dr Mathew's suggestion that it was the foundation for a hut seems probable. Circumstances did not allow of the clearance of the top of the mound to find the post holes which alone could give certainty to this view.

The most surprising discovery was that the silted ditch went down to a depth of twelve feet: cut into solid rock on which pick marks could be seen, it is most impressive testimony to the ability of its creators. The reason for the silting of this part of the ditch complex was soon clear. It had been used as a rubbish tip and the whole of the silt was full of pottery, animal bone and a few iron implements.

The pottery is similar to that from Ntusi already briefly described by Dr Mathew, his Class C being by far the most common. A great deal of it is decorated on the outside by streaks of red paint apparently applied by dipping the fingers in the paint and using them as a brush; in a few cases merely the paint-covered finger tips have been applied. In addition to this rather coarse and gritty ware a much finer red ware, often highly burnished, was found, as well as examples of a fine unburnished black ware. Few complete pots were found. Of them the most interesting is a peculiarly shaped pot open at both ends and

¹ Rev. G. Mathew, *ANTIQUITY*, 108, pp. 215-7.

E. J. Wayland, *Uganda Journal*, 2 (1934-5), pp. 21-32 (with a plan reproduced as fig. 1 above).

² *ANTIQUITY*, 108, pl. III.

ANTIQUITY

pierced for suspension at the narrow end (FIG. 3, *a*). The purpose of such a pot is most obscure; it has been suggested that it is a fumigator, but it is difficult to see how it could be so used.³

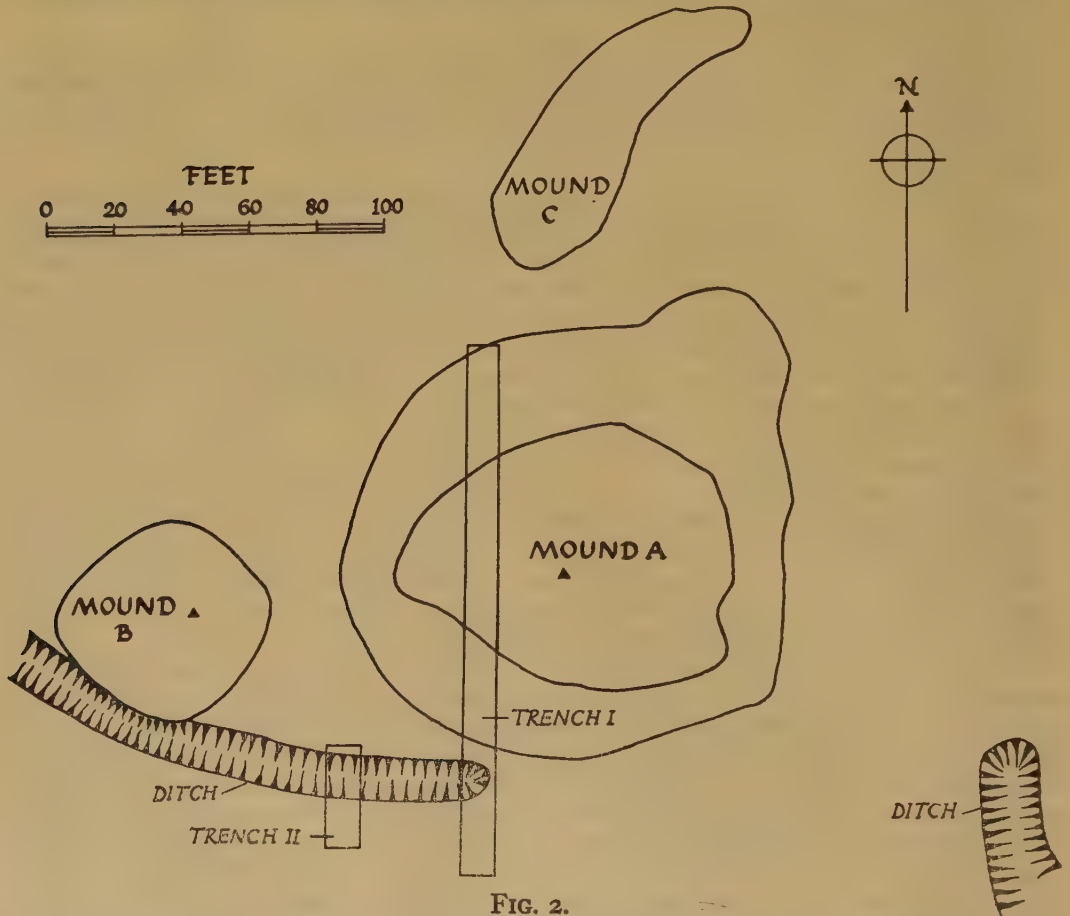


FIG. 2.

The iron implements consist of spear and arrow heads, knives and razors. One of the arrow heads (FIG. 3, *b*) is of the special wedge-shaped type still used by the Bahima for making incisions in the necks of their cattle to draw off the blood which is an important part of this tribe's diet. It is, therefore, an indication that identification of Bachwezi with Bahima may be correct. The excavation at Bigo, though modest in its intention and results, has made available for study the first considerable collection of material from the pre-historic Iron Age of Uganda. A distinctive culture has been revealed, and it should be possible, with properly planned field work, to define its geographical extent. What is now required is further excavation at Bigo, especially on the mounds, and an examination of the other earthworks to the north running up to the east shore of Lake Albert⁴ to see if they also belong to what may be tentatively described as the Bachwezi culture.

³ Two similar but smaller pots were found by E. C. Lanning at Mubende. They are unpublished, but are deposited in the Uganda Museum, nos. 5328 and 5329.

⁴ Listed by E. C. Lanning, *Uganda Journal*, 17 (1953), pp. 51-62.

NOTES AND NEWS

Dating is a problem to which no answer can yet be given. No datable material was found at Bigo and, though not impossible, it is unlikely that imported objects of known date came into this part of Africa more than a hundred years ago. Uganda, far in the interior (it is some 800 miles of hard going from Bigo to the coast) seems to have had little or no contact with the cultural influences that affected Africa's east coast. Ethnic movements seem in the main to have been from the north, and the evidence for the dating of Uganda's Iron Age material may be waiting to be found in south-west Abyssinia and the southern Sudan.

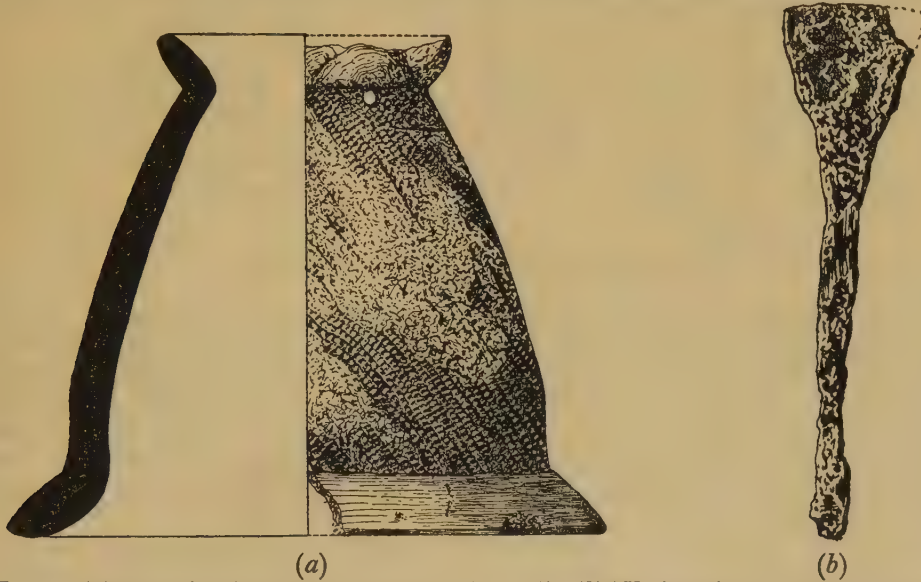


FIG. 3. (a) Pot of unknown use (see p. 56) ($\times \frac{1}{2}$); (b) Wedge-shaped arrow head (see p. 56) ($2\frac{3}{4}$ in. long).

The traditional stories of the Bachwezi suggest that they were at the height of their power some 500 years ago and, in default of any positive evidence to the contrary, that date may be allowed to stand. There is at least nothing in the archaeological material found to make such a date impossible.

P. L. SHINNIE

THE ARIAN AND ORTHODOX BAPTISTERIES AT SALONA

In his *History of Salonitan Christianity*¹ M. Dyggve raises an interesting problem in connexion with the Arian baptistery at Salona. He points out that the Arian and orthodox basilicas have been built according to the same plan, that both are similarly oriented, and that both have an octagonal baptistery on the north side containing a cruciform font. The only noticeable distinction between the two complexes is to be found in the position of the steps leading down into the *piscinae*. In the Arian baptistery they descend from north to south, while in the Nicene they are from west to east (FIG. 1). M. Dyggve considers that this difference cannot be accidental, and suggests that its cause may probably be found in a diversity of ritual practice.

That the Arian baptismal ritual differed in certain particulars from the Nicene is made quite clear by the literary records. Thus we learn from Epiphanius² and from Theodore

¹ Oslo, 1951, pp. 53 f.

² P.G., 42.637B.

Lector³ that the Arians used an irregular formula, baptizing not into the threefold Name but either 'through the Son in the Spirit' or 'into the death of Christ'. Several writers also report that only one immersion was practised instead of the threefold immersion customary in the Catholic Church.⁴ Finally, Epiphanius records the peculiar behaviour of a section of the Arians who turned their candidates upside down for the administration of the rite.⁵

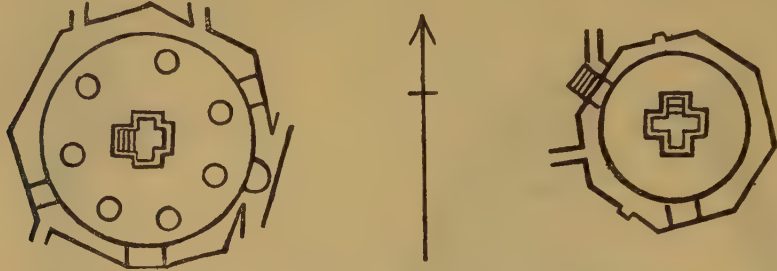


FIG. 1. The orthodox and Arian fonts at Salona.

These are the only differences recorded, and it is reasonable to suppose that there were no others, since the orthodox writers would not have hesitated to have attacked their opponents for any and every divergence from current practice. The *argumentum e silentio* is unquestionably valid in this instance. But no single one of these differences listed above requires a special architectural arrangement, and we must therefore conclude that M. Dyggve is incorrect in his suggestion that the distinction between the orthodox and Arian baptisteries was due to a difference of liturgical practice. Is there then an alternative explanation which does full justice to the facts?

The Arian baptistery is older than the Nicene by something like a quarter of a century; the latter was at first a rectangular structure and was not transformed into its final octagonal shape until A.D. 500-550.⁶ It is then to the Arian baptistery, as the earlier, that we must first direct our attention. In adopting the octagonal plan the architect was in accord with many of his orthodox predecessors, and was no doubt influenced, like them, by the mystical reference to the eighth day as the day of Christ's Resurrection.⁷ He constructed the font in the shape of a cross, and here again he was making no innovation. He had next to provide steps leading down into the *piscina*, and here one must ask if he had any precedents to guide him as to their exact position.

The two points of the compass mentioned in connexion with Baptism are the East and the West. The candidate was required to face the West for his renunciation of Satan and then to turn East for his profession of adherence to Christ. This however took place, according to Cyril of Jerusalem, not by the font but in one of the outer chambers of the baptistery (τόν προαύλιον).⁸ But both the Arian and the Nicene baptisteries have these adjoining rooms, so that no special orientation of the font, or of the building as a whole, would be required for the purposes of these ritual acts. Moreover, the *Testamentum Domini*, a Syriac document of the 5th century, in its description of how to build a church, emphasizes the need for the sanctuary to be at the east end, but, in referring to the

³ P.G., 86.i.196B.

⁴ Didymus, P.G., 39.720A; Socrates, P.G., 67.650A; Sozomen, P.G., 67.1362C; Theodoret, P.G., 83.419C.

⁵ P.G., 42.337C.

⁶ Dyggve, *op. cit.*, p. 26.

⁷ cp. Ambrose, *Ep.*, 20, 44.

⁸ *Mystag.*, i, 2.

NOTES AND NEWS

baptistry, lays down no rules as to its interior disposition.⁹ The general impression would therefore seem to be that the architect was entirely free to arrange the font as he chose. A comparison of certain other fonts,¹⁰ excavated elsewhere, will confirm this impression.

At Castiglione there is a round font into which one can descend by four separate little steps, projecting beyond the circle and so forming a cross; those on the north-east and south-west are rounded, and those on the north-west and south-east are rectangular (FIG. 2, *a*). At Gouéa the font consists of a circular basin to which access is obtained by a

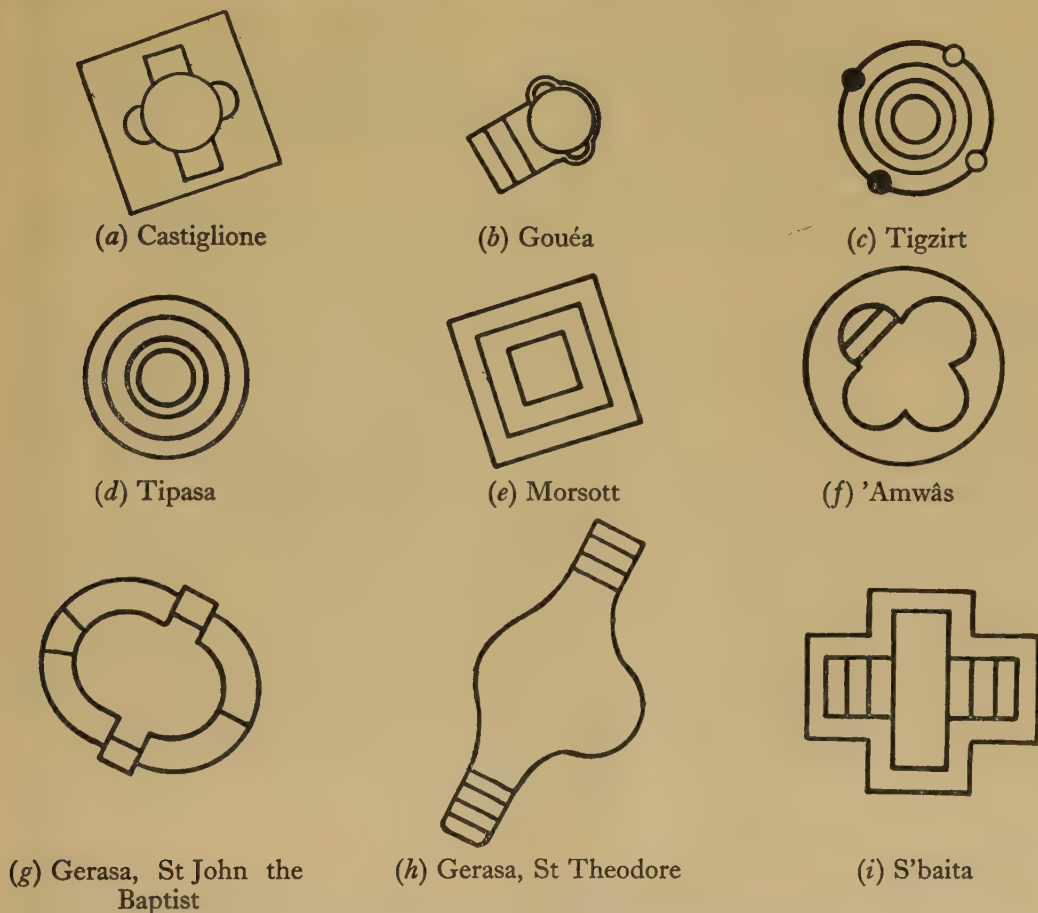


FIG. 2. Comparative table of fonts (North as for Fig. 1).

small stairway of three steps from the south-west (FIG. 2, *b*). At Tigzirt (FIG. 2, *c*) and Tipasa (FIG. 2, *d*) the fonts have three steps completely circling the interior. In the large basilica at Morsott the font is rectangular with two continuous interior steps (FIG. 2, *e*). At 'Amwâs the font is quatrefoil and one enters by two steps in the north-west arm of the cross (FIG. 2, *f*).

⁹ *Gerasa*, ed. C. H. Kraeling, 1938, pp. 175 f.

¹⁰ Obviously the small fonts used for baptism by affusion are irrelevant, since they had no interior steps; these, however, would seem to have formed the majority of those in use; P. Lemerle states he knows of no font deep enough for baptism by immersion in the whole of Greece (*Philippe et la Macédoine orientale*, 1945, pp. 337 f.).

ANTIQUITY

At Gerasa, in the church of St John the Baptist, the font is also quatrefoil and one enters by single steps from the north-east and from the south-west respectively (FIG. 2, *g*), while the oval font in St Theodore's is entered by a series of three or four steps from the same points of the compass (FIG. 2, *h*). At S'baita, in the baptistery of the north church, there is a font in the form of a Maltese cross with steps leading down inside the east and west arms (FIG. 2, *i*).

There is scarcely any need to continue this list, since sufficient evidence has now been adduced to show that architects in the 4th, 5th, and 6th centuries, in different parts of the Empire, felt themselves to be under no restrictions as to either the shape or the location of the steps of the fonts they had constructed. We may assume therefore that the person responsible for the Arian baptistery arranged it according to either his own wishes or those of his employer, with no obligation imposed by ritual or traditional practice. Since he made use of the Latin cross with equal arms there was also no formal necessity compelling him to place the steps in any one particular position.

The architect of the Nicene baptistery quite obviously intended to build something bigger and better than that devised by his heretical opponent. Thus, not only did he transform the previously existing small rectangular building, but he made his resulting octagon larger. In front he placed a handsome prothesis, while inside there was arranged a circle of graceful columns. The architect also chose for the shape of his font the Greek cross, but no doctrinal significance can be attached to this alteration. The adoption of this shape may well have been influenced by the construction of the cruciform church which is immediately adjacent to the bishop's basilica on the south. These two buildings were originally *basilicae geminatae*, i.e. twin-churches. But in the first half of the 6th century, at the same time as the reconstruction of the orthodox baptistery, the southern basilica was also refashioned and assumed the form of the Greek cross. It is not impossible, therefore, that the shape of the font was influenced by the plan of the transformed basilica—the architect was probably the same for both—and one would expect the former to be orientated in the same way as the church which it reproduces in miniature, i.e. towards the east. Since the Greek cross has one arm longer than the other three, symmetry requires the placing of the steps, if there is to be a single flight, in the longer one, and in this case in the western one. I would suggest that this interpretation of the archaeological remains is all that is necessary to explain the differences and similarities between the Arian and orthodox baptisteries at Salona, without our having recourse to the hypothesis tentatively suggested by M. Dyggve, for which indeed there is no evidence.

J. G. DAVIES

PREHISTORIC DENMARK

A correspondent points out that in his review of *Prehistoric Man in Denmark* by Kurt Bröste, with J. B. Jørgensen, C. J. Becker, and J. Brøndsted (ANTIQUITY, 1958, 127), Professor Carleton S. Coon contends that the bearers of Neolithic culture in Denmark were different from those of the Mesolithic age, whereas it is one of the remarkable results of anthropological research that it has been practically impossible to establish any difference between Mesolithic and Early Neolithic population in Denmark. Coon states 'the four authenticated Mesolithic skeletons are Stasevang, Kelderød, and Døjrimge I and II. The four Early Neolithic ones are Koelbjerg, Ravnstrup, Vedbaek, and Korsør Nor'. Our correspondent is anxious that readers of Professor Coon's review in ANTIQUITY should realize that the Mesolithic skeletons are Koelbjerg, Ravnstrup, Vedbaek, and Korsør Nor, whereas Stasevang, Kelderød, and Døringe I and II are Early Neolithic.

NOTES AND NEWS

EARLY COPPER WORKING IN EUROPE

Miss Beatrice Blance, of the Department of Prehistoric Archaeology in the University of Edinburgh, sends this note reporting on a conference held to discuss the beginning of copper metallurgy in Europe.

On 5 and 6 July, 1958, in the Württembergischen Landesmuseum in Stuttgart, a small conference was held by invitation of the Deutschen Forschungsgemeinschaft to discuss the problems of the beginnings and spread of metallurgical techniques in Europe and the Near East.

The conference was organized by the *Arbeitsgemeinschaft zur Spektralanalytischen Untersuchen von Metallgegenständen der Kupfer und Frühbronzezeit*, which is financed by the Deutsche Forschungsgemeinschaft and promoted by CIPHS-UNESCO. The Arbeitsgemeinschaft consists of Prof. Dr K. Bittel, Istanbul; Dr S. Junghans, Stuttgart; Dr H. Otto, Leuna; Prof. Dr E. Sangmeister, Freiburg; and Dr M. Schroeder, Stuttgart. The following were also invited to take part: B. Blance, Edinburgh; C. Cullberg, Lund; Prof. Dr W. Dehn, Marburg; Dr J. Heseman, Krefeld; Dr H. J. Hundt, Mainz; Prof. Dr W. Kimmig, Tübingen; Dr Krämer, Frankfurt; Prof. Dr V. Milojević, Saarbrücken; and E. Neuffer and F. Schubert, Freiburg.

Dr Junghans, in opening the conference, welcomed the guests and regretted that owing either to illness or to pressure of work, Mr Case, Oxford, and Prof. Tackenberg and Dr Treue were unable to be present. The past, present and future work of the Arbeitsgemeinschaft was then discussed by Dr Junghans, who described how between 1947 and 1951 he, together with Dr Klein and Dr Scheufele, had developed a method which, with the help of quantitative spectrographic analysis, showed metal groups, which reflect a uniform processing technique of the original raw material.¹ By this means it is possible to work out the centres of manufacture of prehistoric copper objects. Thanks to the support of the Conseil Permanent de l'Union Internationale des Sciences Préhistoriques et Proto-historiques, samples have been taken and analysed from the following countries: Austria, France, Germany, Gt Britain, Holland, Ireland, Italy, Portugal, Spain, Switzerland and Yugoslavia. H. J. Case (Oxford), J. R. Maréchal (Dives-sur-Mer) and I. Marović (Split), have also allowed their results to be used by the Arbeitsgemeinschaft. Dr Junghans then went on to discuss the possibility of extending the work to Turkey and the Near East, with the aim of finding out where copper was first obtained and worked and how fast the knowledge of copper working spread and in which directions.

The technical processes involved in making an analysis were described by Dr Schroeder, who then went on to explain in simplified language the statistical method by which the metal groups were worked out, after which the guests were taken on a conducted tour of the laboratory.

Prof. Sangmeister, who has been working on the historical implications of the analyses, presented his ideas and conclusions in the evening session.² He first pointed out that in order to use these statistically-determined groups, it was important to keep in mind the limitations of the evidence. Single analyses have no value, except when they belong to certain clearly defined metal groups, and besides this only general statements can be obtained. The density of distribution of any group must be calculated in order to show

¹ Junghans, Klein and Scheufele, 'Untersuchen zur Kupfer und Frühbronzezeit Süddeutschlands', *Bericht der Römisch-Germanische Kommission*, xxxiv (1951-53) pp. 77-114.

² The analyses, together with the conclusions which can be drawn from them, will be published in series entitled *Untersuchungen zu den Anfängen der Metallurgie*, of which the first volume is at present in the process of being published, under the title of *Metallanalysen Kupferzeitlicher Bodenfunde aus Europa*, written by Junghans, Sangmeister, and Schroeder (R. G. K., Frankfurt).

ANTIQUITY

the areas with the highest percentage of finds and not merely areas of more intensive research. Such areas with a high proportion of finds would then represent centres of metallurgy, exporting implements to the other areas. Such centres can be worked out for most groups: e.g. the Spanish or the Hungarian-Yugoslav group, etc. A study of these groups, to find out when and by whom they were used, showed that certain groups were in use during the Eneolithic period (E 01, E 00, C 3 a), others during the early Bronze Age, or Reinecke A 1 (C 1, C 2, B 2, A), while groups F 2 and F 1 were almost exclusively used during Reinecke A 2, and still other groups were used by Eneolithic cultures which were contemporary with the early Bronze Age in Southern Germany (E 10, C 3 b, E 11, B 1). The general results can be used in a re-examination of certain open questions in pre-history, and in his discussion of these problems Prof. Sangmeister considered the following points:

- (1) A new division of the southern and central German hoards on the basis of the associated finds.
- (2) An examination and study of the most important grave finds of the south German Bronze Age (e.g. Straubing and Singen) according to their metal types.
- (3) The significance of the *Scheibenkopfnadel* (or disc-headed pin, e.g. Childe, *Danube in Prehistory*, 1929, p. ix, A 6).
- (4) The part played by the Southern German corded-ware cultures in the early Bronze Age.

The session on the following day opened with a paper on the beginning of the Bronze Age on the Iberian Peninsula, by Miss Blance. She began by describing the Neolithic background to the period, and then the importance of, and the part played by, early centres of metallurgy such as Los Millares, Vila Nova de São Pedro and Alcalar. She continued with a short discussion on the sudden rise and expansion of bell beakers, when the use of hammered metal was a characteristic feature (e.g. tanged daggers, Palmela points, etc.) which was followed by the rise of El Argar and other local cultures noted for their rich and varied metal industry, and frequent use of casting. Miss Blance then produced the Spanish part of a catalogue of early Bronze Age metal objects, from Europe and the Near East, which is being made in Freiburg, with the support of the Forschungsgemeinschaft. The significance of the early centres of metallurgy in the Iberian Peninsula, and their probable relations with the East Mediterranean area, was dealt with in discussion, especially by Profs. Sangmeister and Milošević.

The session continued with a lecture by Hr Schubert on the Copper and early Bronze Age in the North-West Balkans. He said that he had visited Yugoslavia three times in the past few years, primarily with the aim of collecting metal samples for analysis. He himself was more concerned with the purely archaeological study of the cultures and their relationships. Owing to the fact that finds of the early Bronze Age are not numerous in comparison to the large number of heavy copper implements (mainly shaft-hole axes) his work was chiefly concerned with the latter. From a detailed study of the forms, it was possible to distinguish various types, the distributions of which can be limited to different areas. Mr Schubert believed that these groups were products of different workshops.

An interesting discussion of the early Bronze Age in Switzerland was given in a paper read by Mr Neuffer. First of all he reviewed the theories of previous workers, especially those of Tschumi and Vogt, and then went on to consider the Swiss Bronze Age finds, and to link them up with the Reinecke system for Southern Germany. This seemed to show that Reinecke A 1 was more strongly represented in S.W. Switzerland than in the north, where metallurgy was perhaps in the hands of the 'Eneolithic' communities. He ended by saying that he hoped during the summer to visit the more important Swiss

NOTES AND NEWS

museums to take samples for metal analysis. Mr Neuffer's paper aroused much interest and a vigorous discussion followed in which Dr Hundt stressed the importance of the pottery for this period.

The last lecture of the Conference was on the Scandinavian Bronze Age by Mr Cullberg. He gave a survey of the present state of knowledge of the Neolithic and Bronze Age in Scandinavia, and pointed out that the position in the north was quite different from that in central Europe, and was in fact more like that in Great Britain. One of the chief difficulties was that although the archaeologists were well acquainted with the material of their own country, they often, quite understandably, did not fully appreciate the significance of the outside relationships. The late Neolithic problems especially had been worked out from Megalithic or Bronze Age times when the historical situation on the Continent was quite different. In Mr Cullberg's opinion team-work was necessary in order to solve these problems and he hoped that the Arbeitsgemeinschaft would be able to provide this.

Together with archaeological and historical problems, discussed at the end of the lectures, several questions concerning the natural distribution of copper ores and their special compositions arose and were most helpfully dealt with by Drs Hesemann and Otto.

Dr Junghans, in closing the conference, thanked the guests for coming and for providing such interesting discussions, in the course of which many helpful suggestions had been made for further work on the problems of the Bronze Age.

GIUDI

Nobody who considers the map of Dark Age Scotland can fail to be puzzled by the absence from it of Stirling.¹ The Castle Rock of Stirling is ideally suited to primitive methods of defence, and its command of the point where the north-going Roman road crossed the Forth must already, in the post-Roman centuries, have given it the strategic importance that it retained until 1746. It also overlooks the head of navigation on the river. On all these grounds some record of a Dark Age Stirling might reasonably have been looked for—to set, for example, beside Din Eidyn, Alclud, Duncpelder, Dunadd, Dunollie, or Brude's *munitio* in the north—but so far none has been forthcoming. The purpose of this note is to suggest that Bede's *urbs Giudi* should fill the blank.

Bede mentions Giudi in the course of a description of the Firths of Forth and Clyde.² Having alluded to the Scots and Picts as *gentes transmarinas*, he explains that he does so not because they lived outside Britain but because they were remote from the part of it possessed by the Britons, '*duobus sinibus maris interjacentibus, quorum unus ab orientali mari, alter ab occidentali, Britanniae terras longe lateque inrumpit, quamvis ad se invicem pertingere non possint*'. The sentence that bears on the present question then follows, and it reads '*Orientalis [sinus] habet in medio sui urbem Giudi, occidentalis supra se, hoc est ad dexteram sui, habet urbem Alcluith*'. This juxtaposition of Giudi and Alclud immediately suggests that Bede had in mind the principal place on each of the two firths, and that he pictured Giudi as a great fortress comparable with Dumbarton Rock.³ And on this showing, as an eastern counterpart of Dumbarton, Stirling comes naturally to mind.

Constrained by Bede's expression *in medio sui*, Skene identified Giudi with the island of

¹ The earliest reliable record of Stirling dates only from the reign of Alexander I (1107–1124), when it occurs in a charter (Lawrie, *Early Scottish Charters prior to A.D. 1153*, No. CLXXXII). Too much importance should not be attached to the occurrence of the place-name Struthlinn, under the years 995–7, in the Prophecy of St Berchan (Anderson, *Early Sources of Scottish History*, I, p. 519).

² *Hist. Eccles.*, I, c. 12.

³ *Urbs* seems to be an accepted term for a fort, as Bede uses it not only of Alclud but also of Bamburgh (*Hist. Eccles.*, III, cc. 6, 16), and Nennius of a place with a 'cair' name (*Hist. Brit.*, c. 42).

Inchkeith;⁴ but this conclusion, though in formal agreement with Bede, is absurd and need detain no one. Hunter Blair avoids the difficulty by interpreting *in medio* not as 'in the middle' but, as he puts it, 'half-way along',⁵ with the tacit assumption that this really means 'half-way along the south shore'. He would accordingly place Giudi 'in some suitable position', suggesting Inveresk or Cramond. He supports his interpretation of *in medio sui* by indicating that Bede was concerned to contrast the positions of Giudi and Alclud on their respective firths; in this he is unquestionably right, as Bede would presumably not have used distinctive wording unless he had had some topographical difference in mind, but at the same time he seems to have missed the real point of the contrast. Bede does not, by any means, think of Alclud as lying, in Hunter Blair's words, 'at the head of the Firth of Clyde', as he states specifically that it is 'on the right-hand side' (*ad dexteram sui*); and consequently it is just such a position, on one side of the Firth of Forth, that his language rules out in the case of Giudi. Had Giudi been situated, at say, Inveresk or Cramond, no contrast with Alclud would have existed, and the expression *ad dexteram sui* would have been equally applicable to both.

A further argument against Inveresk, on Hunter Blair's interpretation of Bede, is that it lies well east of the centre of the south shore of the Firth, if measured from the Bass Rock to the head of small-craft navigation without regard to minor irregularities or to the windings of the contracted waterway above Alloa. Cramond, which lies some eleven miles west of Inveresk, would meet the case much better, but neither Cramond nor Inveresk possesses the natural defensive qualities that would have appealed to Dark Age natives, nor is there any evidence for a practice of rebuilding ruined Roman forts for defensive use.

The true meaning of *in medio sui* can perhaps be found if we assume that Bede was not himself familiar with the Firth of Forth but depended on the reports of sailors or other casual informants. If so, he may well have imagined the Firth to be a more or less triangular opening with a wide base to seaward, width as well as depth being stressed by his words '*longe lateque*', as it is notoriously difficult to appreciate coastal features from a ship at sea and ordinary observers on land also tend to smooth out the irregularities of Nature;⁶ and he might then understandably have used the words *in medio sui* to mean 'at its apex', regarding the apex as a kind of mid-point between evenly converging shores. Stirling, placed as it is at the highest point that a seaman would be likely to reach, would exactly fit this meaning of *in medio sui*, and no real strain on Latinity would seem to be involved. The use of the phrase would be even more natural if the *sinus* was thought of as a kind of rounded pocket, with Giudi at its bottom.

Alternatively, *in medio sui* might well relate simply to the Castle Rock's appearance as a kind of island, rising abruptly from the middle of the Forth carse-lands. Its aspect would impress any stranger approaching from the east by the river or from the south by the Roman road; and the same idea, of an island set in the middle of flats and backwaters, is apt to be suggested by the view from the summit of the Rock, with the wide meanders of the river flanking its base.

Two possible objections to the theory must now be considered. The first might be based on the possibility⁷ of connecting Evidensca, in the Ravenna Cosmography, with

⁴ *Celtic Scotland*, 1, p. 71.

⁵ *The Origins of Northumbria*, p. 37; *An Introduction to Anglo-Saxon England*, p. 41, n. His argument is contained in the first of these two passages.

⁶ This is, for example, the invariable practice of unlettered persons exploring in the woods in Canada. Their plans show rivers running in straight stretches with tributaries entering at right angles, while lakes are neat circles or ovals.

⁷ *Archaeologia*, xciii (1949), p. 34.

NOTES AND NEWS

Nennius' Iudeu⁸ and so with Bede's Giudi. Professor Richmond informs me that Evidensca must, on the evidence of the Cosmography, have been on the 'Roman' side of the Antonine Wall, and consequently it cannot have been Stirling; but equally it cannot have been Giudi if the argument (*supra*) about the meaning of *in medio sui* is to be accepted. Nor, for that matter, is the equation of Evidensca with Iudeu more than an attractive hypothesis.⁹ The second objection would draw upon Nennius' account of the battle of Campus Gai,¹⁰ and maintain that, wherever this battle was actually fought, it was unlikely to have been near Stirling—with the further implication that *urbs Iudeu* cannot have been that place. However, the possession of Stirling might well have been affected by the political results of a battle fought elsewhere, and even as far away as Leeds;¹¹ while at the same time it would be natural for Oswiu to take a lively interest in Stirling seeing that he could hardly have undertaken serious campaigns in Pictland, such as are implied by Bede's record of his successes against the Picts and Scots,¹² unless he controlled the vital Forth crossing.¹³

In conclusion, I wish to thank Professors K. H. Jackson and I. A. Richmond, Dr K. A. Steer and Mr R. W. Feachem for valuable help and suggestions.

ANGUS GRAHAM

⁸ *Hist. Brit.*, cc. 64, 65.

⁹ *Archaeologia*, loc. cit.

¹⁰ *Loc. cit.* This extremely obscure passage is discussed by Lot, *Nennius et l'Historia Brittonum*, pp. 76 f. and 205, nn. 1, 2. See also Stenton, *Anglo-Saxon England*, pp. 83 f.

¹¹ Stenton, loc. cit.; Bede, *Hist. Eccles.*, III, c. 24.

¹² *Hist. Eccles.*, III, c. 24.

¹³ It is interesting to note that Lot thinks of Iudeu as 'le poste avancé de la Northumbrie contre les Pictes de l'extrême Nord et les Bretons de la vallée de la Clyde' (*op. cit.*, p. 77, n. 1.).

KUML AND SKALK

The Jutland Archaeological Society was founded in March 1951 and now numbers well over 1,500 members from Denmark and abroad. The Journal of the Society, called *Kuml*, appears annually, and its articles have summaries in English and German. The 1956 volume with the dramatic photograph of the hand of Grauballe man on the cover is already famous, and contains not only a full description of the Grauballe find with the publication of Tauber's C.14 date for it of A.D. 310 $\pm$ 100 years, but also articles by Prof. Glob, Harald Andersen, and Peder Mortensen on the work of the Danish Archaeological Bahrain Expedition. The Jutland Archaeological Society publishes, in addition to the Journal, larger works at irregular intervals, of which three have so far been published, namely P. V. Glob, *Ard og Plov i Nordens Oldtid* (40 Danish kroner), M. B. Mackeprang, *De nordiske Guldbrakteater* (60 Danish kroner), and O. Klindt-Jensen, *Bronzekedelen fra Brå* (30 Danish kroner: see *ANTIQUITY*, 1955, 137). The subscription to the Society is 12 Danish kroner annually, while persons and institutions wishing to give special support to the Society may take out prerepresentation-membership for 100 kroner yearly. The address is Jysk Arkæologisk Selskab, Vester Alle, Aarhus, Denmark. Also from Aarhus, comes *Skalk*, a small attractively produced quarterly magazine of popular archaeology edited with vigour and characteristic humour by Harald Andersen, assisted by Georg Kunwald, Olfert Voss and Mogens Orsnes. *Skalk* started in 1957 and we wish it all luck; it is certainly one of the most original and amusing attempts at popularizing archaeology—and is extremely good value for the money: four issues for 4 Danish kroner. *Skalk* is published at the Forhistorisk Museum, Vester alle, Aarhus.

Reviews

THE NATUFIAN CULTURE: The Life and Economy of a Mesolithic People in the Near East. By DOROTHY A. E. GARROD. (*Proceedings of the British Academy*, vol. XLIII, 1957, pp. 211-227.) Oxford University Press, Amen House, London, E.C.4. (Off-print pp. 16 with 9 plates. 4s.).

The catholicity of British archaeological interests at the present time is well illustrated by the titles of the first three Albert Reckitt Lectures to the British Academy: 'William Camden and the Britannia', 'The Economic Approach to Prehistory', and 'Roman Britain and the Roman Military Antiquities'. This, the fourth of the series, may appear at first sight a little specialized; in fact it may well turn out to have the most topical interest of any.

Few problems in post-war years can have evoked such lively interest as those relating to the ultimate origins of civilization in the Near East. Indeed the enthusiasm aroused by such great discoveries as Jarmo, Jericho, and the results of radio carbon dating, has led many whose experience and training were far removed from the Neolithic of western Asia to offer theories and conjectures in almost embarrassing variety.

Hitherto, the majority of such contributions have in fact been from proto-historians versed mainly in the remains of complex urban and peasant communities of very much later date; Dorothy Garrod's paper comes as a timely reminder that, whatever the value of analogies from later material may be, a close study of the matrix from which the momentous innovations in human life arose is at least equally important.

Since her first recognition of the Natufian as a distinct cultural entity over thirty years ago, knowledge of the context to the earliest Neolithic in the area has been enriched by the discovery of several other traditions of Epi-Palaeolithic or Mesolithic character. Still more important solid evidence has been accumulated for the relative stratigraphical position of these, and some idea of their geographical extent. If all the details of the relatively complex situation have not yet fully emerged, the general design seems clear enough.

Closely related Natufian-type communities can now be traced down the whole East Mediterranean littoral from Syria in the north to the confines of Egypt. Inland colonization is abundantly recorded in the Jordan valley, and beyond, and certainly reached the Anti Lebanon range in the North.

The new stratigraphical evidence now demonstrates that the finds from the type site and the bulk of the material from the Mughareh el Wad represent only the initial, if in some respects most varied expression of the culture. Two later stages can be clearly recognized in Central Palestine, in which signs of the growing importance of grain in the diet are accompanied by animal domestication: first dog, then goat and, finally, highly probable traces of a small race of domestic cattle.

These observations, important as they are, are still further enhanced by the crucial succession at el Khiam. Here the Late Natufian can be certainly seen to pass with insensible gradation into the 'Tahunian, whose close relationship to one of the Pre-Pottery Neolithic industries at Jericho was realized by Crowfoot in her original analysis of Garstang's material.¹

¹ These lines were written before the recent announcement of the discovery of a true Natufian horizon at the base of the Jericho succession in ancestral relationship to the Pre-Pottery Neolithic A, and dated by C-14 to 7800 B.C. (see p. 8 above).

REVIEWS

It would seem, then, that the original assessment of the Natufian as one of the primary stages in the development of the Near Eastern Neolithic is fully confirmed. The significance of this lecture lies in the fact that it gives us the considered opinion of the leading specialist in this field on all the cardinal pieces in the evidence.

While the upshot does not, of course, preclude the possibility of parallel development elsewhere—a very similar succession is in fact attested at the Belt Cave south of the Caspian, at about the same period—it does surely render wholly gratuitous any specialized explanations of the origins of the Jericho economy, other than gradual emergence from the wide-spread Natufian complex of Central Palestine.

C. B. M. MCBURNEY

TOWN AND COUNTRY IN ROMAN BRITAIN. By A. L. F. RIVET. *Hutchinson University Library, London, 1958. pp. 195, 1 plate, 9 figures. 10s. 6d.*

This little book gives an admirable account of what, omitting Religion, we might call the British side of Roman Britain. It is clearly written, and the illustrations are well-conceived. After a discussion of the sources both ancient and modern, and introductory chapters describing the Iron Age background and Roman Provincial Administration, the main part of the book discusses the Towns, Villas and agricultural economy of the province, and ends with a valuable chapter on Political Geography in which the British *civitates* are reviewed. And Rivet has put us further in his debt by the addition of detailed bibliographies to each chapter, especially the last; the latter is probably the most valuable single thing in the book.

The account of the Iron Age is in the main traditional, but he has some interesting things to say about the sort of social order implicit in the Hill Forts (p. 41): one wonders how far it is possible here to distinguish between *equites* and kinglets. Even in Belgic Kent there were four such kings in 54 B.C.: in Iron Age A or in the anarchy of Wessex B there must have been many more. Fortified farms, like manors, belong to *equites*; but surely Hambledon, Hod, and the other major forts at least represent independence? Rivet refers (p. 30) to the growth of archaeological myths, and it is interesting to see two such perpetuated in the text. One is about single farms as against villages. Doubtless many 'villages' are in fact merely such farms, but the recognition that clusters of pit dwellings are really clusters of storage pits should not swing us back in reaction too far either in the Iron Age or in the Roman period. We have many great lynchet areas far too large for anything but communal effort, even if such sites as Chysauster did not make it clear (as Bersu, from whom the modern myth derives, in fact himself pointed out (*P.P.S.* vi, 105)). And what are hill forts (of the A period at any rate) but villages which happen to be fortified?

The other is one started by Childe (*Prehist. Communities*, 1940, p. 196) who recalled that Diodorus Siculus (v, 21), deriving from Pytheas, states that the British at harvest cut off no more than the heads of corn and stored them away in *καταστέγους οικήσεις*, which he translated as 'roofed' bins. By 1946, Curwen (*Plough and Pasture*, 102) had rendered this 'underground repositories'. This is repeated by Hamilton, 1956 (*Jarlshof*, 59) and by Piggott, 1958 (*Roman and Native in N. Britain*, 5)—'hoarding them in underground structures'. But the Greek means merely 'roofed dwellings'; there is nothing to suggest a pit, and on the contrary Pytheas seems to be recording the square *overground* granaries of Little Woodbury type. It is ironical, however, to discover that ancient editions of Diodorus gave a variant reading, abandoned by modern editors, *καταγείους οικήσεις*: this *would* mean 'underground buildings' but still could not refer to Iron Age A pits. Perhaps Cornish fougous are in question.

There are many points of great interest in the Iron Age chapter. One may mention the suggestion (p. 47) that the Trinovantes were Belgae; or his explanation of the C phase of the Durotriges, the most reasonable that has yet appeared. Both these points will require expansion in the light of Allen's new work on the coins.

Chapter III is a straightforward account of the official side of Roman Britain, though Rivet (p. 66) slurs over the difference both in Gaul and Britain between the *civitates* and official foundations. 'Venta Belgarum in a sense *was* the *civitas* Belgarum.' But Venta was no more than a *vicus* in the *civitas*. The very real distinction between *civitas* and *territorium* has been well stated by Stevens. 'The tribe is treated as a kind of imaginary city, as though the town walls enclosed the whole area of the tribe. The capital . . . is . . . merely the local repository of its government'. It was quite the opposite of the city-state conception of the official towns.

The chapter on Towns has some excellent outline plans all to the same scale, and some interesting things to say about urban growth. In passing, one may remark that Hardham and Alfoldean, posting stations on Stane Street, have produced only Flavian Samian, and thus probably belong to the take-over of the Regnum of Cogidubnus rather than to the Claudian period itself. This would explain their failure to grow: for by then the main lines of development in that area were already mature. On p. 92 we come to the question of the date and occasion of the walling of towns. We are watching the birth of another myth—'all towns were walled c. A.D. 200'. Rivet himself stresses the difficulty of arriving at the truth. Now Canterbury at least received no walls till after 270; Clausentum, Kenchester, and Great Chesterford even later. May not the real explanation be the terrible fate of the Gallic cities in the 250s, which compelled the Government and decurions alike to the necessary expenditure? No one need worry that precise dating evidence is so far generally lacking: it is only in the last twenty years that we have seen the date advanced from 140 to 200 on the evidence of a few sections. It has always seemed most improbable that Silchester, newly provided with a bank and ditch in Antonine times, would have required a wall as early as 200. The Verulamium wall-tower hoard, too, which seemed to prove that the defences were already there by c. 235 is, in fact, a hoard of only five coins, very oddly put together, and need not date so precisely.

There is not space to say much of the chapter on the Countryside, save that its analysis of the social background of the villa system is brilliant and convincing, and largely new. The mutual dependence of villa and town all through is made very clear: the recognition of the social changes implicit in the new big villas of the 4th century is a substantial addition to our understanding; and there are some sensible things said about the old controversy whether villa owners ploughed in strips, and on the growth of the wool industry in the west.

The last chapter gives us an analysis of each *civitas*, a far more realistic basis for geographical review than the modern counties in which previous regional studies have almost always been grouped, but one not easy to achieve in pre-Rivet ignorance of tribal boundaries. (There are some surprises, here, especially in E. Anglia.) This chapter and its bibliography focus attention on a characteristic of the whole book, its wide but unobtrusive scholarship. The book is in fact a commentary on the non-military part of the O.S. Map of Roman Britain, and is the fruit of its production. The one was widely received with acclamation: it is certain to be repeated for the other, which will long be a source of inspiration and reference on our shelves.

SHEPPARD FRERE

REVIEWS

LE PALAIS ROYAL D'UGARIT, *ed.* CL. F.-A. SCHAEFFER. II: Textes en cunéiformes alphabétiques des archives est, ouest et centrales, *by* C. VIROLLEAUD. III: Textes accadiens et hourrites des archives est, ouest et centrales, *by* J. NOUGAYROL. IV: Textes accadiens des archives sud, *by* J. NOUGAYROL. (Mission de Ras Shamra, Tomes VII, VI and IX.) 11" × 8½". Paris: Imprimerie Nationale, 1955-7. 3800 fr., 6400 fr., 4800 fr., respectively.

The first decade of excavations at Ras Shamra yielded many rich and remarkable finds, but it was not till the 10th/11th season (1938-9) that Dr Schaeffer laid bare the corner of the great building which proved to be the royal palace; and just at that moment his work was interrupted by the outbreak of the Second World War. Work was not resumed until 1948, but in the seasons that followed the excavation of the palace produced results which surpassed all expectations. The palace contained at least four distinct archives, and from each of these came scores of tablets inscribed some in Ugaritic, some in Akkadian, and a few even in Hurrian. M. Virolleaud, till then the chief epigraphist to the expedition, decided to concentrate on the texts in the alphabetic Ugaritic, and the excavator invited M. Nougayrol and M. Laroche to join his team and to undertake the publication of the Akkadian and Hurrian texts respectively. The publication, under the title *Le palais royal d'Ugarit*, was planned on an ample scale, and the three volumes under review are the first of the series to appear. In volume I Dr Schaeffer himself will describe the history of the building, its organization, and the objects and furniture found in it. Four further volumes are already in preparation.

Volume III, containing the majority of the Akkadian texts from the western, eastern and central archives, was produced by M. Nougayrol with remarkable rapidity in 1955. The texts in this volume fall into the categories of letters, juridical documents, economic texts, and a few miscellaneous pieces; the unique tablet inscribed with the trousseau of Queen Ahatmilku, and the inventory of objects forming the tribute due to the Hittite king, are included among the economic texts. Among the twenty-three letters are one from the king of the Hittites and at least two copies of outgoing letters addressed to him; two from the king of Carchemish; one from the king of Sidon; one from the king of Beirut; and one from the king of Parga. By far the largest category is that of the juridical texts, of which there are no less than 176, and the volume contains a penetrating discussion of these from the legal standpoint by M. G. Boyer. Many of them are royal donations. There are forty economic documents and six fragments of 'scholastic' texts (vocabularies). The volume concludes with an edition of the seven Hurrian texts, one of which is a tablet of moral precepts with an Akkadian version.

Volume IV, dated 1956, is devoted to the diplomatic archives unearthed in the southern wing of the palace during the 17th, 18th and 19th seasons (1953-5). All these documents, which are in Akkadian, emanate either from the Hittite chancery at Hattusas or from Hittite vassal states, such as Carchemish; they may thus be regarded almost as a detached section of the Boghazköy archives. As M. Nougayrol remarks, they do not merely throw light on the history of Ugarit in the 14th and 13th centuries: they write it. M. Nougayrol has grouped them by reigns and within each reign by 'dossiers' consisting of documents referring to the same events, an arrangement which brings out to the full the historical importance of the texts. Many of the tablets bear seal impressions which have been studied by Laroche in *Ugaritica III* and have contributed in many ways to our understanding of the Hittite hieroglyphs. The excellent state of preservation of the tablets in the southern archives enhances the importance of this great discovery.

Volumes III and IV are each bound in two parts, one containing the introduction, the

ANTIQUITY

transliteration and translation of the texts, the commentary and registers, etc., the other the facsimile copies.

Volume II, which was the last to appear (1957), contains the texts in the Ugaritic language recovered since the war (12th to 17th seasons). There are three mythological fragments, all belonging to the Baal-Anat cycle; several 'royal deeds' and private letters; lists of craftsmen and other persons; numerous economic texts of various types; thirteen inscribed bullae which served as labels for bundles of tablets; and last—though perhaps the most important—five alphabets, including one from the 10th season published previously but not then recognized for what it was. The labels include six from the southern archives which show that the scribes had their own word *spr* for a group of documents on a single subject such as M. Nougayrol calls a 'dossier'. M. Virolleaud did not find it possible to offer a translation of all the pieces, but each has been copied and transliterated.

All three volumes are provided with full indexes and concordances of tablets arranged according to various principles and are both well printed and handsomely bound.

O. R. GURNEY

PREHISTORY AND RELIGION IN SOUTH-EAST ASIA. By H. G. QUARITCH
WALES. London: Bernard Quaritch, 1957. £2.

Post-palaeolithic archaeology in the *modern* sense owes much, in south-east Asia, to five men who could both dig and write—I. H. N. Evans, von Stein-Callenfels, H. D. Collings, M. W. F. Tweedie and Dr H. G. Quaritch Wales. Of these gentlemen, two alas are dead; and none is operating in Asia to-day. Indeed, the good work largely begun by them has, in the past two decades, almost come to a standstill again—totally so in most countries. To some extent, therefore, the current interest in archaeology, strong in this area as elsewhere in the world, is unfortunately having to be met out of old work. Dr Wales is the only pioneer left in the field who is still writing about it. Now that he has reached his fourth generalized book since 1951, he appears to be running out of material and over-working initially good ideas.

In this latest book, Dr Wales is not only studying the past, but (to an appreciable extent) living in the past. If both these pasts corresponded, the situation would be ideal. Unhappily there is a sharp distinction between the past he is studying and the past technique of scholarship which he is more and more reviving, as fresh experience in his field peters out. The technique is that of developing and elaborating generalizations, which may or may not in the first place have begun in field work, but which end up in very personal theory, often remote from evidence. At the same time, to keep the thing alive, it is necessary (in this technique) to refute other points of view, quote other authors and disparage them; and, in order to keep the matter dialectically simple, ignore work which does not fit in either to the pros or the cons which are being adopted. Serious trouble really begins when such a scholar confuses himself with the fieldworker; and, at the next stage, when he becomes a sort of scholi-politician, advocating and pressing points of view which force him to exaggerate the value to be put upon certain sorts of evidence and decry other sorts altogether.

In the first paragraph of his introduction Dr Wales writes as follows:

'The present work is neither a treatise on the prehistory of south-east Asia nor on its religion. Yet the title is intended to be taken literally.'

We are led to expect something considerable. In fact, we do start with a promising bang, for the first chapter is called 'Palaeolithic Probabilities'. It may seem strange that Dr Wales, whose archaeological and historical work has been concerned with matters of the last few thousand years, should feel confident enough to use the term *probabilities*, under the conditions of our present feeble knowledge of this ancient era in the area. Actually he

REVIEWS

is *forced* to do so, in order to support the thesis which then occupies the remainder of this volume and involves the re-arrangement of ideas embracing major sections of Asian religion, philosophy and basic thought. The palaeolithic probabilities that Dr Wales puts forward in his initial pages devoted to this subject can fairly be summarized thus:

1. The best way of interpreting the palaeolithic and continuing from it into modern times is by taking the modern *people of south-east Australia* as the nearest to the palaeolithic types operating in south-east Asia, during at least the late Pleistocene.
2. The religion of south-east Australia is (or was) 'primitive shamanism', centered round an 'All-Seeing Father'.
3. The Shaman is the intermediary between the south-east Australian and his Deity.
4. By the same token, in the palaeolithic an 'impressive feature of the environment could hardly fail to have been the omnipresent sky, in due course personified as Father Sky'.
5. In parallel with this, 'there is little room to doubt that earth spirits never meant much to nomads', who thus turned away from *direct* animism.
6. The earliest form of deity is thus a 'Supreme Being', but seen as derived from a basis of animism—to 'avoid the mistake of Father Wm. Schmidt who saw it as a primitive monotheism'.
7. Professor R. Pettazzoni ('*The All-Knowing God*', 1956) is then brought in to help overthrow Schmidt and demonstrate the 'ouranic' character and origin of the primitive Supreme Beings whose 'basic attribute of omniscience is due to their being luminous and hence all-seeing, only secondarily all-knowing'.
8. The 'aborigines' of south-east Asia confirm this palaeolithic religion. The Sakai in Malaya have a Supreme Being named Karei; the Andaman Island Negritos call theirs Puluga; Luzon Negritos have Bayagaw. (These are the only south-east Asian deities mentioned by the author to support his contentions.)
9. His argument is then backed up by 'ouranic' examples from African Bushmen, peoples in the Arctic, North and South America (cf. Pettazzoni).
10. All this stems from a palaeolithic conception 'in which a Lord of Beasts was the Supreme Being' *before* 'all-seeing Sky-God'.

This (much elaborated in the book) is the simple substance and subject matter of Dr Wales's 'Palaeolithic Probabilities', from which all the rest essentially follows. It only need be added that there is *not one jot or tittle of evidence*, of *any* kind whatsoever (actual, probable or possible), that *any* of this is—or is not—true of *any* phase in the palaeolithic *anywhere* in south-east Asia.

The book proceeds to a similar treatment of the rather better-known mesolithic; and then a still fuller one of the Bronze Age. Again almost everything is turned onto the one thesis. But let me hasten to add that here and wherever Dr Wales sticks to subjects in which he has specialized—such as what he calls the 'Indianization' of this part of the world or the role of 'Local Genius' and other specific matters—there is much sound stuff of value. In particular, his discussion of Bronze Age drums, symbols, etc., is thoroughly stimulating.

Yet the bitter fact remains that this book, though very good in parts, is not good enough. It is a book that could do more harm than good: not only to the hungry Asian student or to the temper of your choleric critic, but also to the fair name of the author himself—who has in the past done so much for realistic archaeological and historical studies in India, Indochina, Thailand, Malaya and (through his writings) more widely still.

ANTIQUITY

It boils down to this. Where does writing claiming to be 'prehistory' draw the line? It seems to me necessary to draw this line; particularly in south-east Asia, where the subject is so backward, and in danger of going back further. It seems to me that people must declare (and observe) their credentials and qualifications scrupulously before launching out into the wider spheres of archaeo-philosophy or speculative inductive 'prehistory', alleged. In Europe or America, such exercises can do little or no harm, since there is enough critical scholarship and much new research continuing there to check the excesses of the personal mind. In Asia, to-day, that is not so, alas.

In particular, one must watch out for abuses of the technique, extensively resuscitated by Dr Wales, of interpreting the ancient past by supposedly 'primitive' parallels from the present—too often choicely selected snippets from modern (and not-so-modern!) Negrito, Ngadju and other ethnology. Such exercises become absurd, as well as self-destructive, when viewed against the facts of 'primitive life': the variety, viability, elasticity, adaptability and changeability of 'culture', groups, whole nations, individual families in south-east Asia, even within the past decades. I myself happen to have had a ringside seat watching a great area (which includes Ngadju types) inside Borneo changing over, since 1945, from an elaborate form of 'pagan animism' (including shamanism)—and in one area a highly developed and living megalithic cult—into Fundamentalist, Bible-thumping, hell-fire, teetotal, short-trousered, bust-covered, non-smoking, Sabbatarians with prayer meetings before dawn and after dark in the long-house, long graces before meals; a tithe to the mission; out-and-out old-style Sub-Arctic 'Christianity' on the equator. Such changes, some vast, some fast, have occurred with incalculable permutations throughout this part of the world, over thousands of years. Tiresome as it may be for the orderly western-trained mind not to be able to arrange everything at once into exact and binding logical system, the temptation has to be resisted. The present emphasis needs to be predominantly on more fieldwork. Not only fieldwork in archaeology; equally, fieldwork in human subjects like ethnology, where so much of the type of material that 'prehistorians' like Dr Quaritch Wales rely upon to bridge gaps in our knowledge are open—even as reportage—to grave suspicions of inadequacy, one-sided interpretation or flat misunderstanding of the so-called 'primitives' concerned. Many of these 'primitives', too, are beginning to read about our own 'All-Seeing Sky-Father' and His scriptural shamans. Before long will they be tackling Dr Quaritch Wales direct?

TOM HARRISON

ROMAN HISTORY FROM COINS: SOME USES OF THE IMPERIAL COINAGE TO THE HISTORIAN. By MICHAEL GRANT. *Cambridge, at the University Press, 1958. pp. 96, 32 plates in gravure, endpaper maps. 12s. 6d. net*

Professor Grant's book, he tells us, 'is intended to show how coins throw light on the events of the past'; and to illustrate this theme he has 'chosen the coinage of the Roman Empire, which has long been recognized to be of greater historical value than any other of the world's coinages.' The almost casual appearance of this choice will not surprise those who are familiar with the previous body of his writings, which have displayed a passionate interest in Roman imperial coinage over many years.

Just how far he is accurate in defining the historical value of that coinage in his terms of reference is not easy to decide. All depends on what is meant by 'historical.' Only a rash man would minimize the importance, either economic or political, of the coinages of the Greek city-states or of medieval powers, to quote only two obviously pertinent groups. If by the 'historical value' of Roman imperial coinage Grant means that it bears a greater mass of clear factual or quasi-factual statements than nearly all other coinages he is, of

REVIEWS

course, right. This has been widely recognized ever since Renaissance times, and even if the emphasis has varied from one age to another the general truth of the conclusion has seldom been seriously doubted. And today the Roman imperial coinage is undergoing a process (due not least to the work of Grant himself) of particularly diligent exploration.

The results of that exploration are variously received, and the view has often been expressed that the reasons which prompted the mass of statements and claims on Roman imperial coinage need a cool and detached analysis if their historical value is to be accurately estimated. Grant's present book does not attempt to fill that need. Written clearly, sometimes pungently, and always simply, it runs an experienced and selective eye over a few chosen themes. 'How Rulers thought of their Coins' is the lecture which, if carefully worked out at length, could have given us the balanced statement which we need on the informative function of imperial coinage. It is followed by 'Coins and Personalities'—compounded (excusably) of Augustus and Nero and (curiously) imperial ladies. Next come the contrasted themes of war and peace: then 'New Evidence for the Past'; and finally, in 'Approach to World Coinage', a summary version of what Grant has fully developed in other books.

It is difficult to know for whom this sequence is best intended. The converted will have absorbed it far better from those earlier works by Grant. The unconverted or obstinate (and they exist) will not be greatly affected by this light and superficial treatment, even though it is vivid, eloquent and stylish. It may well be, however, that the general student of history, to whom the book is primarily addressed, will find in it the stimulus that will carry him a good stage further. Thirty-two plates, splendidly reproduced (even if awkwardly arranged), display an imposing range of coinage; and it is indisputable that Grant has succeeded in covering a very wide range of topics by means of a treatment which, however selective, is alert and sympathetic. But it must be remembered that this treatment is, in a sense, deliberately uncritical. As long as Roman imperial history has been studied it has been illuminated by the strong and often livid glare cast upon the emperors from the wings of the public stage by those who feared to throw it directly in the face of powerful autocrats. Enemies and sycophants alike distorted the true stature of those they represented. And the emperors themselves were curiously slow to publish the theory of autocratic government for world consumption: few would or could have conceived the obliqueness of the *Res Gestae*. It is the special characteristic of the imperial coinage that it *was* a governmental statement from start to finish—not a series of imperial philosophizings or theories, but of small and immensely sonorous asides that echoed round the empire. It would have been good if this essential distinction, between a generally hostile historical tradition and a governmental bias in the coinage, had been more boldly developed in what Grant has now written.

C. H. V. SUTHERLAND

SCOTLAND BEFORE HISTORY. By STUART PIGGOTT; illustrated by KEITH HENDERSON.
Nelson & Sons, Edinburgh, 1958. pp. 112. Price 15s.

The Ballachulish wooden female presented on the jacket as a fierce *juju* calls to mind the *Adventures of the Black Girl in Search for God*: in that book also a well-known author took the public by surprise by having his essay embellished by an artist in black-and-white. Some will want to own, rather than merely to read, this book just because of the sensitive vigour of the illustrations, in which the creatures and flowers of the environment rightly stand independently beside the men and their works. Some, one hopes many, will be induced to read the text by the assurance from the pictures that the subject is the activities of the people who can be visualized, not cultural abstractions. For them there are wise pages on the limitations of archaeological information, with reminders of it for all.

ANTIQUITY

Readers of ANTIQUITY, however, may be counted on to read each Piggott as it appears, and they will have memories, not altogether happy, of another favourite author's *Scotland before the Scots*. For them is the artistic as stimulating an approach as the Marxist, or 32 woodcuts as useful as 12 tabulated appendices? For everyone except extreme specialists the answer will be yes. Here is a readable up-to-date outline, the story, as the introduction says, of human settlement and development in what is now Scotland from earliest times to the Roman occupation. And the writer explains that the visual and verbal aspects of the book were planned to combine in conveying to the reader something of the monuments of Scottish prehistory as they now stand, inalienably part of the landscape, as well as to suggest the life and craftsmanship of their builders. The illustrations do certainly teach swiftly the essential squalor of Skara Brae, the common humanity of an urn burial, and the stark size of the brochs (but the text misprints 20 for 40 ft. high). They give the reinterpretation of the Deskford swine-head as the mouth of a war-trumpet, of a crannog as a single house in a lake, and a reminder that hill-fort villages must have had store-huts as well as dwellings; and presume that skin trousers do not roll up well, for the Mesolithic whale-hunters are bare-legged on the foreshore. Celtic twilight has been successfully avoided except by the young film-star with a bronze dagger.

Stuart Piggott has throughout stressed the connections with Europe, from the Circumpolar cultures of Gjessing (there are no references or bibliography) to the rare amber beads found in Orkney, in Wessex, and at Mycenae. Fox's famous dictum about the Highland Zone absorbing incoming cultures and cultural replacement in the Lowland Zone is noted as no longer so readily tenable in the present wider and more detailed picture of British archaeology. The geographical factors within Scotland itself are well described, though the trap for English generalizations applied to Scotland springs in the case of forest history, when our old friend the mixed-oak (ash and elm) forest is given as dominant: for it makes a very poor showing compared with birch and alder, not only in Durno's recent pollen diagrams but in excavation reports alike from Kirkcudbrightshire, Roxburghshire and Perthshire. In addition the fauna is made to contain some doubtful beasts—the wolverine (early post-glacial only, or imported), the Orkney sheep (read Shetland), and the commoner inaccuracy, giant elk for giant deer.

It is hard to believe that the microlithic remains in Scotland must be placed mainly after 2500 B.C., and even harder that they may represent hunting parties rather than settlers. Sufficient flint for tools was not in fact considered essential, nor carried already made into tools as it would be by transients, for in the Tweed, upper Clyde and lower Forth areas local cherts were regularly used, and it was left to the secondary Neolithic and Bronze Age peoples to import flint.

Trade in axes from Ulster to Aberdeenshire, and indeed colonization, is an addition to the picture painted in Piggott's *Neolithic Cultures of the British Isles*. To omit now mention of drains at Skara Brae adds unintentionally false colour to the contention that the houses there owe more to the Circumpolar world than to temperate Europe. 'Four-poster' beds also contrast with the sleeping-platforms of the Eur-Asiatic north. While Skara Brae was sunk, or sank, in sand-dunes there is no evidence that the similar houses at Rinyo were semi-subterranean, and their bed-recesses provide a good starting point for the plan of the free-standing houses of Shetland's late Neolithic culture, which is another recent addition to our archaeology.

Thick bracelets, unknown elsewhere in Britain, certainly suggest a relative abundance of bronze in the Scottish early Bronze Age, not previously stressed. It is, however, not made clear that such delay as there was in advancing from a copper-working to a bronze-working economy must have been due to the time required to organize the mining and

REVIEWS

the distribution of Cornish tin on a sufficient scale, and not to ignorance of the need for it.

The scantiness of material securely dated between 1300 and 700 B.C., now that cinerary urns are being pushed back in date, and middle and late Bronze Age I metal types remain rare, is perhaps too worrying a problem to be made explicit in this outline; so, too, the apparent absence of almost all evidence from, or even of, burials between early in the late Bronze Age, at latest, and post-Roman times—whereas earlier they provide the main source of information.

The main Iron Age settlement of Scotland is particularly well dealt with. There is no reference to the very early-looking pottery strangely confined to Shetland, nor speculation what it might imply. Much else, however, will be new to most readers. The Ballachulish lady, Bronze Age in *Ancient British Art*, is now put tentatively in this period. The difference between real invasions, such as those of the Iron Age, and incursions of warriors without their women, is pointed out, but it is a mistake in Scotland to take the Vikings as an example of the latter, for here their women's graves are as numerous and as early as men's.

A final small point is the omission of the Britons from among the five nations that composed early historic Scotland, particularly curious as they are the only one of whom a history has appeared in *ANTIQUITY*.

R. B. K. STEVENSON

THE CONCISE ENCYCLOPAEDIA OF WORLD HISTORY. *Edited by* JOHN BOWLE. *Hutchinson, London, 1958. pp. 511, 160 plates (including 20 maps), 16 colour plates. Price 50s.*

This is the first volume in a new series called New Horizon Books; forthcoming titles include *The Concise Encyclopaedia of Archaeology*, and if it is as well produced and well written as the present book, it will be something of a landmark in archaeological literature. The present book, designed and produced by Rainbird, McLean Ltd., is most attractive; it should, however, have a list of half-tones. John Bowle has selected a fine team of contributors and they have served him well; Weiner writes on the Physical Evolution of Man, Professor John Evans on the Neolithic Revolution and the Foundation of Cities, George Forest on Crete, Mycenae, and Athens, R. H. Pinder-Wilson on Iran, G. F. Hudson on India and China, and A. R. Burn on Alexander, Carthage and Rome – to mention only the contents of the first five of the twenty chapters. Also of great interest to students of the past will be John Bradford's chapter on the Nomad Empires of Asia, and Godfrey Lienhardt's 'Native Cultures of Africa' – a splendid essay in compression and concise writing. But the whole book should be read by everyone concerned with antiquity. It has gone on my shelves alongside H. G. Wells's *Outline of History*, Gordon Childe's *What Happened in History*, Elliot Smith's *Human History*, and Carleton Coon's *The History of Man*, and well deserves its place there. It is still surprising that books dealing with the history of man from a world standpoint, and not merely from the point of view of West European or American history, should be so few. Mr Bowle will be criticized because he has not given more space to the development of ideas and politics in Europe. He is to be congratulated on planning and carrying through a world history which gives space to the times and places so many people still know so little about.

GLYN DANIEL

Ancient Peoples and Places

GENERAL EDITOR: DR GLYN DANIEL

'These compact, excellently illustrated summaries of the present state of knowledge in various fields of archaeological research provide exactly the kind of easily assimilable, but up-to-date and accurate information which the layman needs, whilst at the same time they give the expert . . . a chance to stand back and contemplate the broader outlines of the picture which is emerging'. Professor J. D. Evans *Cambridge Review*

Already Published

Peru G. H. S. BUSHNELL

The Scythians T. TALBOT RICE

Sicily L. BERNABO BREA

The Low Countries S. J. DE LAET

Denmark OLE KLINDT-JENSEN

The Celts T. G. E. POWELL

The Etruscans RAYMOND BLOCH

Wessex J. F. S. STONE

Early Christian Ireland MAIRE AND LIAM DE PAOR

Fully Illustrated 25s. each

A further 30 titles are in preparation, and many more are planned. Volumes to be published during 1959 include *Early India and Pakistan* by Sir Mortimer Wheeler; *Japan* by J. Edward Kidder Jr.; *Malta* by John D. Evans, *Brittany* by P.-R. Giot, and *East Anglia* by R. Rainbird Clarke.

Other books of interest

Fossil Men: A Text Book of Human Palaeontology

MARCELLIN BOULE AND HENRI V. VALLOIS 300 ILLUSTRATIONS £4 4s

History begins at Sumer

SAMUEL NOAH KRAMER 57 PLATES, 28 DRAWINGS 35s

Prehistoric Religion E. O. JAMES 30s

A Picture History of Archaeology

C. W. CERAM 326 ILLUSTRATIONS 16 IN COLOUR 42s



We shall be pleased to keep you informed of our future plans on request

Thames and Hudson

30 Bloomsbury Street London WC 1

HELLENIC TRAVELLERS CLUB

1959 HELLENIC CRUISES

Under the Patronage of the Vice-Chancellors of Oxford, Cambridge, Glasgow, Edinburgh, Wales, Bristol and Liverpool Universities.

CRUISE No. 10

YUGOSLAVIA, GREECE AND TURKEY

1st April to 18th April, 1959

Visiting: Venice, Dubrovnik, Corfu, Corinth, Mycenae, Tiryns, Epidauros, Delos, Mykonos, Rhodes, Lindos, Priene, Miletus, Pergamum, The Bosphorus, Istanbul, Mytilene, Aegina, Athens, Daphni, Eleusis, Sounion, Olympia, Venice.

CRUISE No. 11

GREECE AND TURKEY

19th August to 3rd September, 1959

Visiting: Venice, Olympia, Kythira, Monemvasia, Knossos, Cortyna, Phaestos, Rhodes, Lindos, Cos, Halicarnassus, Ephesus, Seljuk, Samos, Delos, Tinos, Syros, Athens, Daphni, Sounion, Epidauros, Tiryns, Mycenae, Corinth, Delphi, Venice.

CRUISE No. 12

GREECE AND TURKEY

1st September to 16th September, 1959

Visiting: Venice, Olympia, Patras, Delos, Andros, Salonica, Pella, Troy, The Bosphorus, Istanbul, Pergamum, Samos, Tigani, Patmos, Athens, Daphni, Sounion, Epidauros, Tiryns, Mycenae, Corinth, Delphi, Venice.

Each Cruise will be accompanied by five Classical Scholars who will give lectures on board and at the various sites visited.

GUEST LECTURERS INCLUDE:

Sir Maurice Bowra, Mr. John Dancy, Prof. M. E. L. Mallowan, The Rev. A. G. Guy C. Pentreath, Prof. W. B. Stanford, Prof. R. Syme, Sir John Wolfenden.

PRICES FROM 82 GNS.

(Including travel London—Venice and return.)

For full particulars and reservations apply to:

W. F. & R. K. SWAN (HELLENIC), LTD.

260 (M99), TOTTENHAM COURT ROAD, LONDON, W.1

Telephone: MUSeum 8070 (12 lines)

**SOCIETY FOR
HELLENIC TRAVEL**

1959

SUMMER CRUISES

in the ss *Hermes*

CRUISE 8
TO THE ISLES OF GREECE AND
COASTS OF ASIA MINOR

August 10th – 23rd

visiting VENICE, DELPHI, HOSIOS
LOUKAS, SANTORIN, ALANYA,
ANTALYA, RHODES, BODRUM,
SAMOS, DELOS, MYCONOS AND
ATHENS.

PRICES FROM 82 GNS

Guest Lecturers include Lord Kinross;
Dr. G. L. Lewis, M.A., D.Phil., Reader in
Islamic Studies in the University of Oxford;
Professor D. L. Page, M.A., F.B.A.,
F.S.A., Regius Professor of Greek in the
University of Cambridge.

CRUISE 9
TO GREECE, THE BLACK SEA
AND ISTANBUL

August 23rd – September 8th

visiting ATHENS, SKIATHOS, VOLOS
(for the Meteora), VARNA, NESSEBAR,
YALTA, ISTANBUL, CHIOS, DELPHI,
CORFU AND VENICE.

PRICES FROM 93 GNS

Guest Lecturers include Professor S. Kono-
valov, B.Litt., M.A., Professor of Russian
in the University of Oxford; Professor
H. W. Parke, M.A. (Oxon.), Litt.D.,
Professor of Ancient History in Trinity
College, Dublin; Mr. Cecil Stewart,
M.A., F.R.I.B.A., Head of the School of
Architecture at the Manchester College of
Art.

* * * *

All berth prices include: first-class travel by
special train to Venice (Cruise 8) or from
Venice (Cruise 9), and air travel from
Athens (Cruise 8) or to Athens (Cruise 9);
all meals on trains and aircraft, and land
excursions at the ports visited.

Full details and ship's plan from

FAIRWAYS & SWINFORD
(TRAVEL) LTD (Dept. AM)

18, St. George Street, Hanover Square,
LONDON, W. 1.

NELSON

Roman and Native
in North Britain

edited by I. A. RICHMOND A chronological
survey of the Roman Occupation of North
Britain; each chapter contributed by experts
in different fields, Professor Stuart Piggott
writes on the Roman Occupation and the
Native Economies; John Clarke on Roman and
Native A.D. 60-122; J. P. Gillam carrying the
story up to A.D. 197. K. A. Steer discusses the
Severan re-organisation; Professor Richmond
brings the survey to its conclusion in the 4th
century.

8 $\frac{7}{8}$ " $\times$ 6 $\frac{3}{8}$ " x + 166pp 18s
Nelson's Studies in History and Archaeology

Scotland Before
History

STUART PIGGOTT The story of human
settlement and development in Scotland
from the earliest times to the Roman Occu-
pation. The illustrations by Keith Henderson
are complementary to the text, planned in
collaboration by the author and artist to
present the monuments of Scottish pre-
history as they now exist, and to suggest the
life and crafts of prehistoric times. 32 scraper-
board illustrations.

8 $\frac{1}{2}$ " $\times$ 5 $\frac{1}{2}$ " viii + 112pp 15s

Greeks

by MICHAEL GRANT *and* DON
POTTINGER An unusual book of universal
interest—at once a scholarly account of the
Greeks, terse and accurate, and also a
delightful volume elegantly produced. The
abundant illustrations in two colours are
by Don Pottinger whose witty adornments
to the text will need no introduction to
admirers of *Simple Heraldry*, *Simple Custom*
and *Blood Royal*. This book will convey to
readers of every age much more about our
debt to Hellenic culture than do many
more portentous volumes.

Crown 4to 64pp 12s 6d



Inyanga

ROGER SUMMERS

The results of a survey of a mountainous region in Southern Rhodesia, with descriptions of excavation sites, the artefacts found there, and a reconstruction of Inyanga's early history. Published for the Inyanga Research Fund.

22 plates; 85 figures

50s. net

Mycenean Pottery in Italy

LORD WILLIAM TAYLOUR

In this book all the evidence bearing on Mycenaean influence in Italy is gathered together for the first time. The main narrative is followed by a detailed catalogue giving descriptions of the vases. 17 plates; 27 text-figures.

55s. net

Bronze Age Cultures in France

N. K. SANDARS

'This admirable volume on the Bronze Age—authoritative, exhaustive, modest, well-illustrated—a magistral work of reference and synthesis which will be on the shelves of all serious students of the ancient European past.' THE TIMES LITERARY SUPPLEMENT

£5 10s. net

Method & Theory in American Archaeology

G. R. WILLEY & P. PHILLIPS

A book which establishes a common terminology and method for archaeological studies of North and South America. UNIVERSITY OF CHICAGO PRESS

36s. net

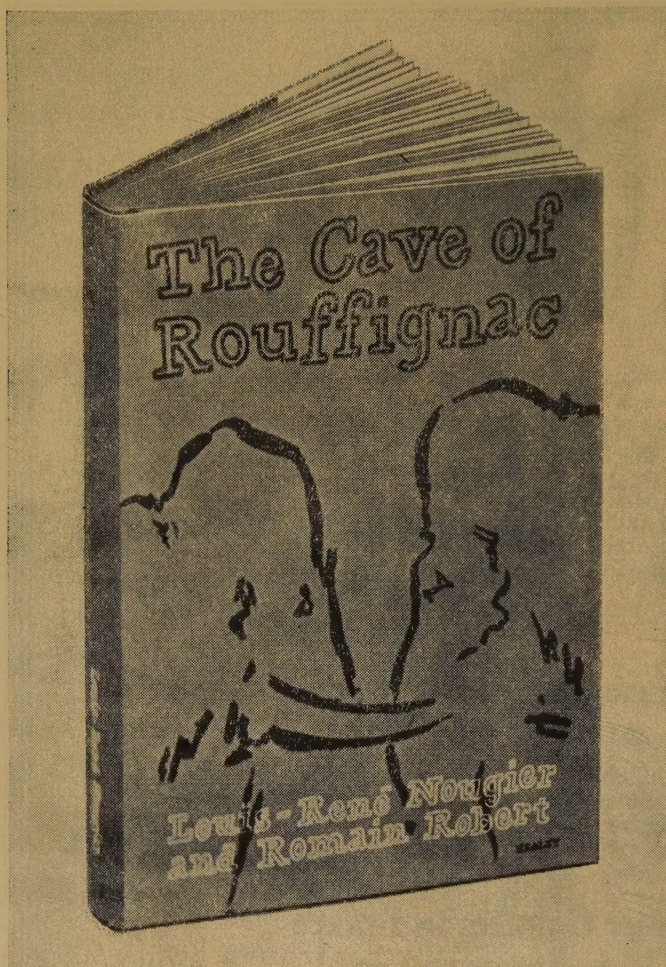
CAMBRIDGE UNIVERSITY PRESS

BENTLEY HOUSE, 200 EUSTON ROAD, LONDON, N.W.1

THE CAVE OF ROUFFIGNAC

by
LOUIS-RENÉ NOUGIER
and
ROMAIN ROBERT

Translated by
DAVID SCOTT



CONTENTS

THE PREHISTORIC ERA AT ROUFFIGNAC

Rouffignac at the time of the Great Cave Bear. Rouffignac at the time of the Mammoths. The Woolly Rhinoceros (Rhinoceros Tichorhinus). The Companions of the Mammoth and the Rhinoceros. The Missing Animals. Traces of Man.

THE HISTORY OF ROUFFIGNAC

From François de Belleforest (1575) to Louis Moreri (1725). Joseph de Chancel (1730) and the Marquis de Miremont. The Plan of 1759 and the Chevalier de Barry. Rouffignac in the Year Sextile XI of the French Era. In the time of Martel. The little Cave-Explorers.

THE DISCOVERY OF ROUFFIGNAC

26th June, 1956. First Attacks, July 1956. "Slavish Copies". Practical Jokes. Scientific Peace Restored. The Forgers Unmasked.

APPENDIX OF DOCUMENTS ON ROUFFIGNAC

"This is a lively and fascinating book, which is also illustrated with many good photographs."

THE TIMES LITERARY SUPPLEMENT.

On the 26th June, 1956, the cave paintings and drawings in the Grotto of Rouffignac were discovered by Professor Nougier and M. Romain Robert. The number and size of the drawings and their prehistoric significance made this a discovery of the first importance, far exceeding any similar discovery of cave paintings and drawings for many years past. The magnitude and importance of this find immediately created a storm of controversy and there were some who sought to prove that the drawings were forgeries. But the authenticity of these drawings is now established beyond all doubt by world-famous authorities. No one can read this fascinating account of the Mammoths of Rouffignac without a thrill of excitement in drawing close to a period tens of thousands of years ago. 240 pages and 20 half-tone plates.

36s. net

NEWNES

BRITISH MUSEUM

Recent publications include the following:

CHRONICLES OF THE CHALDAEAN KINGS (626-556 B.C.) IN THE BRITISH MUSEUM

A study by D. J. Wiseman with the texts of all the Babylonian historical records known as the Chronicles. 1956.

Pp. xi, 99, and 21 plates

£1 5s.

CATALOGUE OF THE MOHAMMADAN COINS IN THE BRITISH MUSEUM. Vol. II : Catalogue of the Arab-Byzantine and Post-Reform Umayyad Coins

Descriptions by J. Walker of the Mohammadan coins with legends in various languages which were struck after the Byzantine model under the early invaders in the first century of Islam, and of all the other coins struck during the Umayyad Caliphate of Damascus. 1956.

Pp. civ, 329, and 31 plates

£5 10s.

CUNEIFORM TEXTS FROM CAPPADOCIAN TABLETS : Part V

Texts of 120 business documents, edited by S. Smith and D. J. Wiseman, completing the publication of the tablets of the 'Cappadocian' class in the British Museum. 1956.

Pp. 4, and 50 plates

£1 7s. 6d.

CATALOGUE OF NIMRUD IVORIES IN THE BRITISH MUSEUM

A detailed study by R. D. Barnett of the large collection of ivories from Nimrud. 1957.

Pp. 252, and 132 plates

£8 8s.

UR EXCAVATIONS : Vol. IV : THE EARLY PERIODS

A report by Sir Leonard Woolley on the sites and objects prior to the Third Dynasty or Ur discovered between 1928 and 1934 in the course of the excavations. 1956.

Pp. 225, and 83 plates

£5 15s.

Handbooks now available include:

Roman Coins, 5s. Antiquities of Roman Britain, 6s.
Flint Implements, 4s. 6d. Inventaria Archaeologica :
Bronze Age Hoards in the British Museum, 10s. Late
Prehistoric Antiquities of the British Isles, 6s. Sutton
Hoo Ship Burial, 7s.

Obtainable from most booksellers or from

The DIRECTOR, British Museum, LONDON, W.C.1

Lists of publications on request

A History of Greece

N. G. L. HAMMOND

This book gives the general reader and the scholar alike a modern interpretation of Greek ideas, culture, and actions. Reference is made throughout to the sources of our knowledge, so that the reader can turn to the original material, and will have a proper apparatus for the further study and appreciation of historical events and problems.

Illustrated 35s. net (FORTHCOMING)

Roman Literary Portraits

EINAR LÖFSTEDT

TRANSLATED BY P. M. FRASER

A selection translated from the Swedish, which illustrates various aspects of the literature of the Roman Republic and Empire, one of the most important writers discussed being the Emperor Marcus Aurelius.

21s. net

Textual Criticism

PAUL MAAS

TRANSLATED FROM THE GERMAN BY BARBARA FLOWER

This translation will be welcomed in England, where there has so far been no serious work on the subject. It is written with the literatures of ancient Greece and Rome mainly in mind, but some essential principles apply equally to other literatures, especially Shakespeare.

12s. 6d. net

The Ancient Near East

AN ANTHOLOGY OF TEXTS AND PICTURES

EDITED BY JAMES B. PRITCHARD

The aim of this volume is to make available in convenient form those ancient Near Eastern documents important for an understanding of biblical peoples and their writings. The selections have been made from the editor's two books *Ancient Near Eastern Texts* and *The Ancient Near East in Pictures*. 96 pages of illustrations (*Princeton University Press*)

40s. net

Archaeology and the Old Testament

JAMES B. PRITCHARD

The author is himself an active archaeologist, and his purpose here is to assess the kind of change in viewing the biblical past which archaeology has brought about in the last century. (*Princeton University Press*)

Illustrated 30s. net

OXFORD UNIVERSITY PRESS